United States Early Radio History

Section 2

United States Government Regulation: Documents and Extracts, 1907-1924

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by

Thomas H. White

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United States Early Radio History, Section 2

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3. Act to Require Apparatus and Operators for Radio Communication on Certain Ocean Steamers, June 24, 1910.

4. Operator's Certificate of Skill in Radiocommunication, per the June 24, 1910 Act.

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8. Radio Inspection Districts.

9. An Act to Regulate Radio Communication, Aug. 13, 1912.

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14. Regulations for Radio Apparatus and Operators on Steamers, July 1, 1913.

15. Radio Communication Laws of the United States, July 27, 1914.

16. Amendments to the July 27, 1914 Edition of Radio Communication Laws of the United States.

17. Radio Communication Laws of the United States, Aug. 15, 1919.

18. Amendments to the Aug. 15, 1919 Edition of Radio Communication Laws of the United States.

19. Selected Announcements from the Radio Service Bulletin, Jan. 1915 to Jan. 2, 1923.

20. Early Radio Station Lists Issued by the U.S. Government.

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United States Government Regulation: Documents and Extracts, 1907-1924

UNITED STATES EARLY RADIO HISTORY
THOMAS H. WHITE

section 2

1. **United States Early Radio History: Articles and Extracts**
2. ***United States Government Regulation: Documents and Extracts, 1907-1924***
3. **Original Articles I:** Call Signs/Broadcast Band/Pioneer Stations/Records
4. **Original Articles II:** khz-meters/DC/Mars/International Tests/WJY

Early U. S. Government documents about regulatory policies. (This section was added March 22, 1998.)

- Although the United States did not enact any laws or regulations affecting radio before 1910, it was a signatory to the *International Wireless Telegraph Convention*, signed at Berlin on November 3, 1906, and effective July 1, 1908. (Although U.S. representatives signed the agreement in 1906, the U.S. Senate did not ratify the Berlin Convention until April 3, 1912, and the President proclaimed U.S. adherence to the Convention effective May 25, 1912).

- On June 24, 1910, the U.S. approved an Act to require apparatus and operators for radio communication on certain ocean steamers, which required larger vessels to install radio equipment by July 1, 1911. (On July 23, 1912 this act was amended to cover additional vessels.) The job of enforcing the new law was assigned to the Bureau of Navigation within the Department of Commerce and Labor, which would be responsible for regulating U.S. radio until the 1927 formation of the Federal Radio Commission. Although the U.S. had not yet ratified the 1906 Berlin Convention, the law did follow some of the standards specified by that agreement, including certification of radio operators for the ships required to carry radio equipment. However, the new law did not set up any station licencing, even though the Berlin agreement had called for ship stations to be licenced.
  - ***Annual Report of the Commissioner of Navigation to the Secretary of Commerce and Labor*** (extracts):
    - Fiscal Year Ended June 30, 1910 There was just over a year to prepare for the requirements of the June 24, 1910 act. As part of the preliminary work, U.S. collectors of customs at the various ocean ports gathered information about the ships which would be covered under the act.
    - Fiscal Year Ended June 30, 1911 This annual report was the first submitted after enforcement of the June 24, 1910 act had begun. Three "wireless-ship inspectors", based in New York, San Francisco and Baltimore, had been detailed to enforce the provisions of the new law. This report also lobbied for enactment of a law to require radio stations to be licenced, and suggested that the U. S. government should take over ownership of all coastal ship-to-shore radio stations.

- The U.S. finally passed a comprehensive Act to Regulate Radio Communication on August 13, 1912, which went into force December 13, 1912. Officially this new law implemented provisions of the 1906 Berlin Convention. However, a new International Radiotelegraphic Convention had been signed in London on July 5, 1912, to become effective July 1, 1913, and the new U.S. law included many provisions which actually reflected standards of the soon-to-be ratified London Convention, most importantly the requirement that most radio stations had to be licenced, plus the provision that radio operators now had to quality for operator's licences, not just certification. A number of publications were issued as the Bureau of Navigation worked to implement its new responsibilities under the 1912 radio act, including:
  - *Annual Report of the Commissioner of Navigation to the Secretary of Commerce and Labor for the Fiscal Year Ended June 30, 1912* (extract) The Bureau of Navigation only had 4 months to hire additional radio inspectors and set up the regulations covering the 1912 act.
  - ***Regulations Governing Radio Communication*** (three editions):
    - Edition September 28, 1912 explained the new law and the requirements which would go into effect December 13, 1912. The international references are still to the 1906 Berlin Convention.
    - Edition February 20, 1913 The 1912 Act to Regulate Radio Communication was now in force. Also, the international standards now referred to the recently ratified 1912 London Convention. (The 1912 London Convention was ratified by the United States Senate on January 22, 1913, and formally proclaimed by the President as effective on July 8, 1913, replacing the 1906 Berlin Convention).
    - Edition July 1, 1913 reflected more refinements, plus the fact that the Bureau of Navigation was now part of the Commerce Department. (The Department of Commerce and Labor had been split into two separate cabinet departments).
  - *Radio Call Letters: Edition May 9, 1913*. (This was the only version of this document, as subsequent call letter policies were reported in the annual *Radio Stations of the United States*, beginning with its first issue of July 1, 1913.)
  - *Regulations for Radio Apparatus and Operators on Steamers: Edition July 1, 1913*. (Earlier versions of this

publication were known as *Department Circular No. 241*, of which I have not uncovered any copies).

- The separate information listed above was eventually consolidated into a single comprehensive publication, *Radio Laws and Regulations of the United States*, which included the text of the U.S. June 12, 1910 ship act (as amended July 23, 1912), the Articles and Service Regulations of the 1912 London Radiotelegraphic Convention, the text and regulations of the U.S. August 13, 1912 radio act, plus the resulting Bureau of Navigation radio regulations.
    - *Radio Laws and Regulations of the United States: Edition July 27, 1914* was the first version of this document.
    - Amendments to the July 27, 1914 edition were reported in the monthly *Radio Service Bulletin*, from issue #1 (January, 1915) through issue #32 (December 1, 1919).
    - *Radio Laws and Regulations of the United States: Edition August 15, 1919* was the updated second edition.
    - Amendments to the August 15, 1919 edition were reported in the *Radio Service Bulletin*, from issue #33 (January 1, 1920) through issue #73 (May 1, 1923).

- Both the 1906 Berlin and 1912 London International Conventions mainly dealt with international communication--most importantly, extending the international protocols, for connecting national *wire*-telegraph systems, to include the new *radio*-telegraph stations. Radio stations that provided local services were largely outside the scope of the international conventions. However, the period after 1912 included a tremendous growth in the U.S. in the number of amateur stations, plus the beginnings of broadcasting--activities which were barely addressed by the international agreements, and also to only a limited extent by the U.S. 1912 radio act. Selected *Radio Service Bulletin* announcements, for the period 1915 to 1923, review the important issues and activities developing during this formative period.

- As it began to regulate radio, the U. S. government started keeping track of the various stations. Early Radio Station Lists Issued By the U.S. Government is a review I've put together of early official government lists published by the various governmental departments.

- ***Annual Report of the Commissioner of Navigation to the Secretary of Commerce for the Fiscal Year ended June 30, 1924.*** Entire contents of a section entitled BROADCAST LISTENERS: "The broadcast listener is an unknown quantity. Dependable figures indicating the number of persons deriving pleasure and benefit from this new and fascinating service can not be furnished. Its effect can not be forecast, nor its value estimated. An accurate expression of its views is unobtainable".

"During the war it became the custom, doubtless for valid reasons, to create commissions, boards, or committees to accomplish many purposes and to vote to them large lump sums, in some instances vast sums, to carry out these purposes."--*Annual Report of the Commissioner of Navigation to the Secretary of Commerce for the Fiscal Year Ended June 30, 1920*

Berlin International Wireless Telegraph Convention, Nov. 3, 1906.

[SEAL.]
DEPARTMENT OF THE NAVY
BUREAU OF EQUIPMENT

INTERNATIONAL WIRELESS TELEGRAPH CONVENTION

CONCLUDED BETWEEN

GERMANY, THE UNITED STATES OF AMERICA, ARGENTINA, AUSTRIA, HUNGARY, BELGIUM, BRAZIL, BULGARIA, CHILE, DENMARK, SPAIN, FRANCE, GREAT BRITAIN, GREECE, ITALY, JAPAN, MEXICO, MONACO, NORWAY, THE NETHERLANDS, PERSIA, PORTUGAL, ROUMANIA, RUSSIA, SWEDEN, TURKEY, AND URUGUAY.

WASHINGTON
GOVERNMENT PRINTING OFFICE
1907

This is an HTML version of the original government document, *International Wireless Telgraph Convention* [N5.2:W74/6], which recorded the text of an international radio agreement, signed in Berlin in 1906.

This HTML version is based on a photocopy of the original 56-page publication. The original document contained both French and English language versions of the agreement, however, this HTML version includes only the English translation. It incorporates the original contents (except for some minor elements, such as page number references), keeping as much as possible the layout of the original document.

International Wireless Telegraph Convention concluded between Germany, the United States of America, Argentina, Austria, Hungary, Belgium, Brazil, Bulgaria, Chile, Denmark, Spain, France, Great Britain, Greece, Italy, Japan, Mexico, Monaco, Norway, the Netherlands, Persia, Portugal, Roumania, Russia, Sweden, Turkey, and Uruguay.

The undersigned, plenipotentiaries of the Governments of the countries enumerated above, having met in conference at Berlin, have agreed on the following Convention, subject to ratification:

ARTICLE 1.

The High Contracting parties bind themselves to apply the provisions of the present Convention to all wireless telegraph stations open to public service between the coast and vessels at sea--both coastal stations and stations on shipboard--which are established or worked by the Contracting Parties.

They further bind themselves to make the observance of these provisions obligatory upon private enterprises authorized either to establish or work coastal stations for wireless telegraphy open to public service between the coast and vessels at sea, or to establish or work wireless telegraph stations, whether open to general public service or not, on board of vessels flying their flag.

ARTICLE 2.

By "coastal stations" is to be understood every wireless telegraph station established on shore or on board a permanently moored vessel used for the exchange of correspondence with ships at sea.

Every wireless telegraph station established on board any vessel not permanently moored is called a "station on shipboard."

ARTICLE 3.

The coastal stations and the stations on shipboard shall be bound to exchange wireless telegrams without distinction of the wireless telegraph system adopted by such stations.

ARTICLE 4.

Notwithstanding the provisions of Article 3, a station may be reserved for a limited public service determined by the object of the correspondence or by other circumstances independent of the system employed.

ARTICLE 5.

Each of the High Contracting Parties undertakes to connect the coastal stations to the telegraph system by special wires, or, at least, to take other measures which will insure a rapid exchange between the coastal stations and the telegraph system.

ARTICLE 6.

The High Contracting Parties shall notify one another of the names of coastal stations and stations on shipboard referred to in Article 1, and also of all data, necessary to facilitate and accelerate the exchange of wireless telegrams, as specified in the Regulations.

ARTICLE 7.

Each of the High Contracting Parties reserves the right to prescribe or permit at the stations referred to in Article 1, apart from the installation the data of which are to be published in conformity with Article 6, the installation and working of other devices for the purpose of establishing special wireless communication without publishing the details of such devices.

ARTICLE 8.

The working of the wireless telegraph stations shall be organized as far as possible in such manner as not to disturb the service of other wireless stations.

ARTICLE 9.

Wireless telegraph stations are bound to give absolute priority to calls of distress from ships, to similarly answer such calls and to take such action with regard thereto as may be required.

ARTICLE 10.

The total charge for wireless telegrams shall comprise:

1. The charge for the maritime transmission, that is:

(a) The coastal rate, which shall fall to the coastal station;

(b) The shipboard rate, which shall fall to the shipboard station.

2. The charge for transmission over the lines of the telegraph system, to be collected according to the general regulations.

The coastal rate shall be subject to the approval of the Government of which the coastal station is dependent, and the shipboard rate to the approval of the Government whose flag the ship is flying.

Each of these rates shall be fixed in accordance with the tariff per word, pure and simple, with an optional minimum rate per wireless telegram, on the basis of an equitable remuneration for the wireless work. Neither rate shall exceed a maximum to be fixed by the High Contracting Parties.

However, each of the High Contracting Parties shall be at liberty to authorize higher rates than such maximum in the case of stations of ranges exceeding 800 km. or of stations whose work is exceptionally difficult owing to physical conditions in connection with the installation or working of the same.

For wireless telegrams proceeding from or destined for a country and exchanged directly with the coastal stations of such country, the High Contracting Parties shall advise one another of the rates applicable to the transmission over the lines of their

telegraph system. Such rates shall be those resulting from the principle that the coastal station is to be considered as the station of origin or of destination.

ARTICLE 11.

The provisions of the present Convention are supplemented by Regulations, which shall have the same force and go into effect at the same time as the Convention.

The provisions of the present Convention and of the Regulations relating thereto may at any time be modified by the High Contracting Parties by common consent. Conferences of plenipotentiaries or simply administrative conferences, according as the Convention or the Regulations are affected, shall take place from time to time; each conference shall fix the time and place of the next meeting.

ARTICLE 12.

Such conferences shall be composed of delegates of the Governments of the contracting countries.

In the deliberations each country shall have but one vote.

If a Government adheres to the Convention for its colonies, possessions or protectorates, subsequent conferences may decide that such colonies, possessions or protectorates, or a part thereof, shall be considered as forming a country as regards the application of the preceding paragraph. But the number of votes at the disposal of one Government, including its colonies, possessions or protectorates, shall in no case exceed six.

ARTICLE 13.

An International Bureau shall be charged with collecting, coordinating and publishing information of every kind relating to wireless telegraphy, examining the applications for changes in the Convention or Regulations, promulgating the amendments adopted, and generally performing all administrative work referred to it in the interest of international wireless telegraphy.

The expenses of such institution shall be borne by all the contracting countries.

ARTICLE 14.

Each of the High Contracting Parties reserves to itself the right of fixing the terms on which it will receive wireless telegrams proceeding from or intended for any station, whether on shipboard or coastal, which is not subject to the provisions of the present Convention.

If a wireless telegram is received the ordinary rates shall be applicable to it.

Any wireless telegram proceeding from a station on shipboard and received by a coastal station of a contracting country, or accepted in transit by the administration of a contracting country, shall be forwarded.

Any wireless telegram intended for a vessel shall also be forwarded if the administration of the contracting country has accepted it originally or in transit from a non-contracting country, the coastal station reserving the right to refuse transmission to a station on shipboard subject to a non-contracting country.

ARTICLE 15.

The provisions of Articles 8 and 9 of this Convention are also applicable to wireless telegraph installations other than those referred to in Article 1.

ARTICLE 16.

Governments which are not parties to the present Convention shall be permitted to adhere to it upon their request. Such adherence shall be communicated through diplomatic channels to the contracting Government in whose territory the last conference shall have been held, and by the latter to the remaining Governments.

The adherence shall carry with it to the fullest extent acceptance of all the clauses of this Convention and admission to all the advantages stipulated therein.

ARTICLE 17.[a]

The provisions of Articles 1, 2, 3, 5, 6, 7, 8, 11, 12 and 17 of the International Telegraph Convention of St. Petersburg of July 10/22, 1875, shall be applicable to International wireless telegraphy.

[a] See translation of the Articles of the International Telegraph Convention referred to in Article 17, affixed.

ARTICLE 18.

In case of disagreement between two or more contracting Governments regarding the interpretation or execution of the present Convention or the Regulations referred to in Article 11, the question in dispute may, by mutual agreement, be submitted to arbitration. In such case each of the Governments concerned shall choose another Government not interested in the question at issue.

The decision of the arbiters shall be arrived at by the absolute majority of votes.

In case of a division of votes, the arbiters shall choose, for the purpose of settling the disagreement, another contracting Government which is likewise a stranger to the question at issue. In case of failure to agree on a choice, each arbiter shall propose a disinterested contracting Government, and lots shall be drawn between the Governments proposed. The drawing of the lots shall fall to the Government within whose territory the international bureau provided for in Article 13 shall be located.

ARTICLE 19.

The High Contracting Parties bind themselves to take, or propose to their respective legislatures, the necessary measures for insuring the execution of the present Convention.

ARTICLE 20.

The High Contracting Parties shall communicate to one another any laws already framed, or which may be framed, in their respective countries relative to the object of the present Convention.

ARTICLE 21.

The High Contracting Parties shall preserve their entire liberty as regards wireless telegraph installations other than provided for in Article 1, especially naval and military installations, which shall be subject only to the obligations provided for in Articles 8 and 9 of the Present Convention.

However, when such installations are used for general service they shall conform, in the execution of such service, to the provisions of the Regulations as regards the mode of transmission and rates.

ARTICLE 22.

The present Convention shall go into effect on the 1st day of July, 1908, and shall remain in force for an indefinite period or until the expiration of one year from the day when it shall be denounced by any of the contracting parties.

Such denunciation shall affect only the Government in whose name it shall have been made. As regards the other Contracting Powers, the Convention shall remain in force.

ARTICLE 23.

The present Convention shall be ratified and the ratifications exchanged at Berlin with the least possible delay.

In witness whereof the respective plenipotentiaries have signed one copy of the Convention, which shall be deposited in the archives of the Imperial Government of Germany, and a copy of which shall be transmitted to each Party.

Done at Berlin, November 3, 1906.

For Germany:
Kraetke.
Sydow.
For United States:
Charlemagne Tower.
H. N. Manney.
James Allen.
John I. Waterbury.
For Argentina:
J. Olmi.
For Austria:
Barth.
Fries.
For Hungary:
Pierre de Szalay.
Dr. de Hennyey.
Hollós.
For Belgium:
F. Delarge.
E. Buels.
For Brazil:
Cesar de Campos.
For Bulgaria:
Iv. Stoyanovitch.
For Chile:
J. Muñoz Hurtado.
J. Mery.
For Denmark:
N. R. Meyer.
I. A. Voehtz.
For Spain:
Ignacio Murcia.
Ramón Estrada.
Rafael Rávena.
Isidro Calvo.
Manuel Noriéga.
Antonio Peláez-Campomanes.
For France:
J. Bordelongue.
L. Gaschard.
Boulanger.
A. Devos.
For Great Britain:
H. Babington Smith.
A. E. Bethell.
R. L. Hippisley.
For Greece:
T. Argyropoulos.
For Italy:
J. Colombo.
For Japan:
Osuke Asano.
Rokure Yashiro.
Shunkichi Kimura.
Ziro Tanaka.
Saburo Hyakutake.
For Mexico:
José M. Pérez.
For Monaco:
J. Depelley.
For Norway:
Heftye.
O. T. Eidem.
For Netherlands:
Kruyt.
Perk.
Hoven.
For Persia:
Hovhannès Khan.
For Portugal:
PauloBenjaminCabral.
For Roumania:
Gr. Cerkez.
For Russia:
A. Eichholz.
A. Euler.
Victor Bilibine.
A. Remmert.
W. Kédrine.
For Sweden:
Herman Rydin.
A. Hamilton.
For Turkey:
Nazif Bey.
For Uruguay:
F. A. Costanzo.

SUPPLEMENTARY AGREEMENT.

The undersigned plenipotentiaries of the Governments of Germany, the United States of America, Argentina, Austria, Hungary, Belgium, Brazil, Bulgaria, Chile, Denmark, Spain, France, Greece, Monaco, Norway, the Netherlands, Roumania, Russia, Sweden, Turkey, and Uruguay bind themselves mutually, from the date of the going into effect of the Convention, to conform to the provisions of the following supplementary articles:

I.

Each station on shipboard referred to in Article 1 of the Convention shall be bound to correspond with any other station on shipboard without distinction of the wireless telegraph system adopted by such stations respectively.

II.

The Governments which have not adhered to the foregoing article may at any time signify, by following the procedure prescribed by Article 16 of the Convention, that they bind themselves to conform to its provisions.

Those which have adhered to the foregoing article may at any time, under the same provisions as provided for in Article 22, signify their intention to cease conforming to its provisions.

III.

This agreement shall be ratified and the ratifications exchanged at Berlin with the least possible delay.

In witness whereof the respective plenipotentiaries have signed one copy of the present Agreement, which shall be deposited in the archives of the Imperial Government of Germany, and a copy of which shall be transmitted to each of the Parties.

Done at Berlin, November 3, 1906.

For Germany:
KRAETKE.
SYDOW.
For United States:
CHARLEMAGNE TOWER.
H. N. MANNEY.
JAMES ALLEN.
JOHN I. WATERBURY.
For Argentina:
J. OLMI.
For Austria:
BARTH.
FRIES.
For Hungary:
PIERRE DE SZALAY.
DR. DE HENNYEY.
HOLLÓS.
For Belgium:
F. DELARGE.
E. BUELS.
For Brazil:
CESAR DE CAMPOS.
For Bulgaria:
IV. STOYANOVITCH.
For Chile:
J. MUÑOZ HURTADO.
J. MERY.
For Denmark:
N. R. MEYER.
I. A. VOEHTZ.
For Spain:
IGNACIO MURCIA.
RAMÓN ESTRADA.
RAFAEL RÁVENA.
ISIDRO CALVO.
MANUEL NORIÉGA.
ANTONIO PELÁEZ-CAMPOMANES.
For France:
J. BORDELONGUE.
L. GASCHARD.
BOULANGER.
A. DEVOS.
For Greece:
T. ARGYROPOULOS.
For Monaco:
J. DEPELLEY.
For Norway:
HEFTYE.
O. T. EIDEM.
For Netherlands:
KRUYT.
PERK.
HOVEN.
For Roumania:
GR. CERKEZ.
For Russia:
A. EICHHOLZ.
A. EULER.
VICTOR BILIBINE.
A. REMMERT.
W. KÉDRINE.
For Sweden:
HERMAN RYDIN.
A. HAMILTON.
For Turkey:
NAZIF BEY.
For Uruguay:
F. A. COSTANZO.

FINAL PROTOCOL.

At the moment of signing the Convention adopted by the International Wireless Telegraph Conference of Berlin, the undersigned plenipotentiaries have agreed as follows:

I.

The High Contracting Parties agree that at the next Conference the number of votes to which each country is entitled (Article 12 of the Convention) shall be decided at the beginning of the deliberations, so that the colonies, possessions or protectorates admitted to the privilege of voting may exercise their right to vote during the entire course of the proceedings of such Conference.

This decision shall be of immediate effect and remain in force until amended by a subsequent Conference.

As regards the next Conference, applications for the admission of new votes in favor of colonies, possessions or protectorates which may have adhered to the Convention shall be addressed to the International Bureau at least six months prior to the date of the convening of such Conference. Notice of such applications shall at once be given to the remaining contracting Governments, which may, within the period of two months from the receipt of the notice, formulate similar applications.

II.

Each contracting Government may reserve the right to designate, according to circumstances, certain coastal stations to be exempted from the obligation imposed by Article 3 of the Convention, provided that, as soon as this measure goes into effect, there shall be opened within its territory one or several stations subject to the obligations of Article 3, insuring, within the region where the exempted stations are located, such wireless telegraph service as will satisfy the needs of the public service. The Governments desiring to reserve this right shall give notice thereof in the form provided for in the second paragraph of Article 16 of the Convention, not later than three months before the Convention goes into effect, or, in case of subsequent adhesion, at the time of such adhesion.

The countries whose names follow below declare now that they will not reserve such right:
Germany,
United States,
Argentina,
Austria,
Hungary,
Belgium,
Brazil,
Bulgaria,
Chile,

Greece,
Mexico,
Monaco,
Norway,
Netherlands,
Roumania,
Russia,
Sweden,
Uruguay.

III.

The manner of carrying out the provisions of the foregoing article shall be at the discretion of the Government which takes advantage of the right of exemption; such Government shall be at liberty to decide from time to time, in its own judgement, how many stations and what stations shall be exempted. Such Government shall likewise be at liberty as regards the manner of carrying out the provision relative to the opening of other stations subject to the obligations of Article 3, insuring, within the region where the exempted stations are located, such wireless telegraph service as will satisfy the needs of the public service.

IV.

It is understood that, in order not to impede scientific progress, the provisions of Article 3 of the Convention shall not prevent the eventual employment of a wireless telegraph system incapable of communicating with other systems, provided, however, that such incapacity shall be due to the specific nature of such system and that it shall not be the result of devices adopted for the sole purpose of preventing intercommunication.

V.

The adherence to the Convention by the Government of a country having colonies, possessions or protectorates shall not carry with it the adherence of its colonies, possessions or protectorates, unless a declaration to that effect is made by such Government. Such colonies, possessions or protectorates as a whole, or each of them separately, may form the subject of a separate adherence or a separate denunciation within the provisions of Articles 16 and 22 of the Convention.

It is understood that the stations on board of vessels whose headquarters is a port in a colony, possession or protectorate may be deemed as subject to the authority of such colony, possession or protectorate.

VI.

Note is taken of the following declaration:

The Italian delegation in signing the Convention does so with the reservation that the Convention can not be ratified on the part of Italy until the date of the expiration of her contracts with Mr. Marconi and his Company, or at an earlier date if the Government of the King of Italy shall succeed in fixing a date by negotiations with Mr. Marconi and his Company.

VII.

In case one or several of the High Contracting Parties shall not ratify the Convention, it shall nevertheless be valid as to the parties which shall have ratified it.

In witness whereof the respective plenipotentiaries have drawn up the present Final Protocol, which shall be of the same force and effect as though the provisions thereof had been embodied in the text of the Convention itself to which it has reference, and they have signed one copy of the same, which shall be deposited in the archives of the Imperial Government of Germany, and a copy of which shall be transmitted to each of the Parties.

Done at Berlin, November 3, 1906.

For Germany:
KRAETKE.
SYDOW.
For United States:
CHARLEMAGNE TOWER.
H. N. MANNEY.
JAMES ALLEN.
JOHN I. WATERBURY.
For Argentina:
J. OLMI.
For Austria:
BARTH.
FRIES.
For Hungary:
PIERRE DE SZALAY.
DR. DE HENNYEY.
HOLLÓS.
For Belgium:
F. DELARGE.
E. BUELS.
For Brazil:
CESAR DE CAMPOS.
For Bulgaria:
IV. STOYANOVITCH.
For Chile:
J. MUÑOZ HURTADO.
J. MERY.
For Denmark:
N. R. MEYER.
I. A. VOEHTZ.
For Spain:
IGNACIO MURCIA.
RAMÓN ESTRADA.
RAFAEL RÁVENA.
ISIDRO CALVO.
MANUEL NORIÉGA.
ANTONIO PELÁEZ-CAMPOMANES.
For France:
J. BORDELONGUE.
L. GASCHARD.
BOULANGER.
A. DEVOS.
For Great Britain:
H. BABINGTON SMITH.
A. E. BETHELL.
R. L. HIPPISLEY.
For Greece:
T. ARGYROPOULOS.
For Italy:
J. COLOMBO.
For Japan:
OSUKE ASANO.
ROKURE YASHIRO.
SHUNKICHI KIMURA.
ZIRO TANAKA.
SABURO HYAKUTAKE.
For Mexico:
JOSÉ M. PÉREZ.
For Monaco:
J. DEPELLEY.
For Norway:
HEFTYE.
O. T. EIDEM.
For Netherlands:
KRUYT.
PERK.
HOVEN.
For Persia:
HOVHANNÈS KHAN.
For Portugal:
PAULOBENJAMINCABRAL.
For Roumania:
GR. CERKEZ.
For Russia:
A. EICHHOLZ.
A. EULER.
VICTOR BILIBINE.
A. REMMERT.
W. KÉDRINE.
For Sweden:
HERMAN RYDIN.
A. HAMILTON.
For Turkey:
NAZIF BEY.
For Uruguay:
F. A. COSTANZO.

SERVICE REGULATIONS

AFFIXED TO THE

INTERNATIONAL WIRELESS TELEGRAPH CONVENTION

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SERVICE REGULATIONS ANNEXED TO THE INTERNATIONAL WIRELESS TELEGRAPH CONVENTION.

1. ORGANIZATION OF WIRELESS TELEGRAPH STATIONS.

I.

The choice of wireless apparatus and devices to be used by the coastal stations and stations on shipboard shall be unrestricted. The installation of such stations shall as far as possible keep pace with scientific and technical progress.

II.

Two wave lengths, one of 300 meters and the other of 600 meters, are authorized for general public service. Every coastal station opened to such service shall use one or the other of these two wave lengths. During the whole time that a station is open to service it shall be in condition to receive calls according to its wave length, and no other wave length shall be used by it for the service of general correspondence. Each Government may, however, authorize in coastal stations the employment of other wave lengths designed to insure long-range service or any service other than for general public correspondence established in conformity with the provisions of the Convention, provided such wave lengths do not exceed 600 meters or that they do exceed 1,600 meters.

III.

1. The normal wave length for stations on shipboard shall be 300 meters. Every station on shipboard shall be installed in such manner as to be able to use this wave length. Other wave lengths, may be employed by such stations provided they do not exceed 600 meters.

2. Vessels of small tonnage which are unable to have plants on board insuring a wave length of 300 meters may be authorized to use a shorter wave length.

IV.

1. The International Bureau shall be charged with drawing up a list of wireless telegraph stations of the class referred to in Article 1 of the Convention. Such list shall contain for each station the following data:

(1) Name, nationality and geographical location in the case of coastal stations; name, nationality, distinguishing signal of the International Code and name of ship's home port in the case of stations on shipboard;
(2) Call letters (the calls shall be distinguishable from one another and each must be formed of a group of three letters);
(3) Normal range;
(4) Wireless telegraph system;
(5) Class of receiving apparatus (recording, acoustic, or other apparatus);
(6) Wave lengths used by the station (the normal wave length to be underscored);
(7) Nature of service carried on by the station;
General public correspondence;
Limited public correspondence (correspondence with vessels . . .; correspondence with shipping lines . . .; correspondence with ships fitted with apparatus of the . . . system, etc.);
Long-range public correspondence;
Correspondence of private interest;
Special correspondence (exclusively official correspondence); etc.
(8) Hours during which station is open;
(9) Coastal rate or shipboard rate.

2. The list shall also contain such data relating to wireless telegraph stations other than those specified in Article 1 of the Convention as may be communicated to the International Bureau by the Management of the Wireless Telegraph Service ("Administration") to which such stations are subject.

V.

The exchange of superfluous signals and words is prohibited to stations of the class referred to in Article 1 of the Convention. Experiments and practice will be permitted in such stations in so far as they do not interfere with the service of other stations.

VI.

1. No station on shipboard shall be established or worked by private enterprise without authority from the Government to which the vessel is subject. Such authority shall be in the nature of a license issued by said Government.

2. Every station on shipboard that has been so authorized shall comply with the following requirements:

(a) The system employed shall be a syntonized system;

(b) The rate of transmission and reception, under normal conditions shall not be less than twelve words a minute, words to be counted at the rate of five letters each;

(c) The power transmitted to the wireless telegraph apparatus shall not, under normal conditions, exceed one kilowatt. Power exceeding one kilowatt may be employed when the vessel finds it necessary to correspond while more than 300 kilometers distant from the nearest coastal station, or when, owing to obstructions, communication can be established only by means of an increase of power.

3. The service of the station on shipboard shall be carried on by a telegraph operator holding a certificate issued by the Government to which the vessel is subject. Such certificate shall attest the professional efficiency of the operator as regards:

(a) Adjustment of the apparatus;

(b) Transmission and acoustic reception at the rate of not less than 20 words a minute;

(c) Knowledge of the regulations governing the exchange of wireless telegraph correspondence.

4. The certificate shall furthermore state that the Government has bound the operator to secrecy with regard to the correspondence.

VII.

1. If the management of the wireless telegraph service of a country has knowledge of any infraction of the Convention or of the Regulations committed in any of the stations authorized by it, it shall ascertain the facts and fix the responsibility.

In the case of stations on shipboard, if the operator is responsible for such infraction, the management of the wireless telegraph service shall take the necessary measures and, if the necessity should arise, withdraw the certificate. If it is ascertained that the infraction is the result of the condition of the apparatus or of instructions given the operator, the same method shall be pursued with regard to the license issued to the vessel.

2. In cases of repeated infractions chargeable to the same vessel, if the representations made to the wireless telegraph management of the country to which the vessel is subject by that of another country remain without effect, the latter shall be at liberty, after giving due notice, to authorize its coastal stations not to accept communications proceeding from the vessel at fault. In case of disagreement between the managements of the wireless telegraph service of two countries, the question shall be submitted to arbitration at the request of either of the two Governments at issue. The procedure in such case shall be the same as indicated in Article 18 of the Convention.

2. HOURS OF SERVICE OF COASTAL STATIONS.

VIII.

1. The service of coastal stations shall, as far as possible, be constant, day and night, without interruption.

Certain coastal stations, however, may have a service of limited duration. The management of the wireless telegraph service of each country shall fix the hours of service.

2. The coastal stations whose service is not constant shall not close before having transmitted all their wireless telegrams to the vessels which are within their radius of action, nor before having received from such vessels all the wireless telegrams of which notice has been given. This provision is likewise applicable when vessels signal their presence before the actual cessation of work.

3. FORM AND POSTING OF WIRELESS TELEGRAMS.

IX.

If the route of a wireless telegram is partly over telegraph lines, or through wireless telegraph stations subject to a non-contracting Government, such telegram may be transmitted provided the managements of the wireless telegraph service to which such lines or stations are subject have declared that, if the occasion should arise, they will comply with such provisions of the Convention and of the Regulations as are indispensable to the regular transmission of wireless telegrams and that the payment of charges is insured.

X.

1. Wireless telegrams shall show in the preamble that the service is "wireless" ("radio").

2. In the transmission of wireless telegrams of shipboard stations to coastal stations, the date and hour of posting may be omitted in the preamble.

Upon reforwarding a wireless telegram over the telegraph system, the coastal station shall show thereon its own name as the office of origin, followed by that of the vessel, and shall state, as the hour of posting, the hour when the telegram was received by

it.

XI.

The address of wireless telegrams intended for ships at sea shall be as complete as possible. It shall embrace the following:

(a) The name of the addressee, with additional designations if any;

(b) The name of the vessel as it appears in the list, supplemented by her nationality and, if necessary, by her distinguishing signal of the International Code, in case there are several vessels of time same name;

(c) The name of the coastal station as it appears in the list.

4. RATES.

XII.

The coastal rate shall not exceed 60 centimes (11.6 cents) a word, and the shipboard rate shall not exceed 40 centimes (7.7 cents) a word.

A minimum rate per telegram, not to exceed the coastal rate or shipboard rate for a wireless telegram of ten words, may be imposed as coastal or shipboard rate.

XIII.

The country within whose territory a coastal station is established which serves as intermediary for the exchange of wireless telegrams between a station on board ship and another country shall be considered, so far as the application of telegraph rates is concerned, as the country of origin or of destination of such telegrams, and not as the country of transit.

5. COLLECTION OF CHARGES.

XIV.

The total charge for wireless telegrams shall be collected of the sender.

Stations on shipboard shall to that end have the necessary tariffs. They shall be at liberty, however, to obtain information from coastal stations on the subject of rates for wireless telegrams for which they do not possess all the necessary data.

6. TRANSMISSION OF WIRELESS TELEGRAMS.

a. SIGNALS OF TRANSMISSION.

XV.

The signals to be employed are those of the Morse International Code.

XVI.

Ships in distress shall use the following signal:

•••———•••

repeated at brief intervals.

As soon as a station perceives the signal of distress it shall cease all correspondence and not resume it until after it has made sure that the correspondence to which the call for assistance has given rise is terminated.

In case the ship in distress adds at the end of the series of her calls the call letters of a particular station the answer to the call shall be incumbent upon that station alone. If the call for assistance does not specify any particular station, every station receiving such call shall be bound to answer it.

XVII.

1. The call letters following the letters

•——• •—• —•••

"P R B" signify that the vessel or station making the call desires to communicate with the station called by means of the

International Signal Code.

The combination of the letters P R B as a service signal for any other purpose than that specified above is prohibited.

2. Wireless telegrams may be framed with the aid of the International Signal Code.

Those addressed to a wireless telegraph station with a view to being forwarded by it are not to be translated by such station.

b. ORDER OF TRANSMISSION.

XVIII.

Between two stations wireless telegrams of the same order shall be transmitted one by one, by the two stations alternately, or in series of several telegrams, as the coastal station may indicate, provided the duration of the transmission of each series does not exceed twenty minutes.

c. METHOD OF CALLING WIRELESS STATIONS AND TRANSMISSION OF WIRELESS TELEGRAMS.

XIX.

1. As a general rule, it shall be the shipboard station that calls the coastal station.

2. The call should be made, as a general rule, only when the distance of the vessel from the coastal station is less than 75 per cent of the normal range of the latter.

3. Before proceeding to a call, the station on shipboard shall adjust its receiving apparatus to its maximum sensibility and make sure that the coastal station which it wishes to call up is not in correspondence with any other station. If it finds that any transmission is in progress it shall wait for the first pause.

4. The shipboard station shall use for calling the normal wave of the coastal station.

5. If in spite of these precautions the public exchange of wireless telegrams is impeded at any place, the call shall cease upon the first request from a coastal station open to public correspondence. The latter station shall in such case indicate the approximate length of time it will be necessary to wait.

XX.

1. The call shall comprise the signal

— · — · —

the call letters of the station called repeated three times, the word "from" ("de") followed by the call letters of the sending station repeated three times.

2. The called station shall answer in making the signal

— · — · —

followed by the call letters of the corresponding station repeated three times, the word "from," its own call letters, and the signal

— · —

XXI.

If a station called does not answer the call (Article XX) repeated three times at intervals of two minutes, the call shall not be resumed until after an interval of half an hour, the station issuing the call having first made sure that no wireless telegraph correspondence is in progress.

XXII.

1. As soon as the coastal station has answered, the shipboard station shall make known to it:
(a) The distance of the vessel from the coastal station in nautical miles;
(b) Her true bearing in degrees counted from 0 to 360;
(c) Her true course in degrees counted from 0 to 360;
(d) Her speed in nautical miles;
(e) The number of words she has to transmit.

2. The coastal station shall answer, stating the number of words to be transmitted to the vessel.

3. If the transmission can not take place immediately, the coastal station shall inform the station on shipboard of the approximate length of time that it will be necessary to wait.

XXIII.

When a coastal station receives calls from several shipboard stations, the coastal station shall decide the order in which the shipboard stations shall be admitted to exchange their messages.

In fixing this order the coastal station shall be guided exclusively by the necessity of permitting each station concerned to exchange the greatest possible number of wireless telegrams.

XXIV.

Before beginning the exchange of correspondence the coastal station shall advise the shipboard station whether the transmission is to be effected in the alternate order or by series (Article XVIII); it shall then begin the transmission or follow up the preliminaries with the signal

— · —

(invitation to transmit).

XXV.

The transmission of the wireless telegram shall be preceded by the signal

— · — · —

and terminated by the signal

· — · — ·

followed by the name of the sending station.

XXVI.

When a wireless telegram to be transmitted contains more than 40 words, the sending station shall interrupt the transmission after each series of about 20 words by an interrogation point

· · — — · ·

and shall not resume it until after it has obtained from the receiving station a repetition of the last word duly received, followed by an interrogation point.

In the case of transmission by series, acknowledgment of receipt shall be made after each wireless telegram.

XXVII.

1. When the signals become doubtful every possible means shall be resorted to to finish the transmission. To this end the wireless telegram shall be repeated at the request of the receiving station, but not to exceed three times. If in spite of such triple repetition the signals are still unreadable the wireless telegram shall be canceled. If no acknowledgment of receipt is received the transmitting station shall again call up the receiving station. If no reply is made after three calls the transmission shall not be followed up any further.

2. If in the opinion of the receiving station the wireless telegram, although imperfectly received, is nevertheless capable of transmission, said station shall enter the words "reception doubtful" at the end of the preamble and let the wireless telegram follow.

XXVIII.

All stations are bound to carry on the service with as little expense of energy as may be necessary to insure safe communication.

d. ACKNOWLEDGMENT OF RECEIPT AND CONCLUSION OF WORK.

XXIX.

1. Receipt shall be acknowledged in the form prescribed by the International Telegraph Regulations, preceded by the call letters of the transmitting station and followed by those of the receiving station.

2. The conclusion of a correspondence between two stations shall be indicated by each station by means of the signal.

•••–•–

followed by its call letters.

e. DIRECTIONS TO BE FOLLOWED IN SENDING WIRELESS TELEGRAMS.

XXX.

1. In general, the shipboard stations shall transmit their wireless telegrams to the nearest coastal station.

2. A sender on board a vessel shall, however, have the right to designate the coastal station through which he desires to have his wireless telegram transmitted.

3. The station on shipboard shall then wait until such coastal station shall be the nearest. If this can not be done, the wishes of the sender are to be complied with only if the transmission can be effected without interfering with the service of other stations.

7. DELIVERY OF WIRELESS TELEGRAMS AT THEIR DESTINATION.

XXXI.

When for any cause whatever a wireless telegram proceeding from a vessel at sea can not be delivered to the addressee, a notice of non-delivery shall be issued. Such notice shall be transmitted to the vessel if possible. When a wireless telegram received by a shipboard station can not be delivered, the station shall notify the office of origin by official notice. Such notice shall be transmitted, whenever practicable, to the coastal station through which the wireless telegram has passed in transit; otherwise, to the nearest coastal station.

XXXII.

If the ship for which a wireless telegram is intended has not signalled her presence to the coastal station within the period designated by the sender, or, in the absence of such designation, by the morning of the 29th day following, the coastal station shall notify the sender.

The latter shall have the right to ask, by a paid official notice, sent by either telegraph or mail and addressed to the coastal station, that his wireless telegram be held for a further period of 30 days for transmission to the vessel, and so on. In the absence of such request, the wireless telegram shall be put aside as not transmissible at the end of the 30th day (exclusive of the day of posting).

If, however, the coastal station has positive information that the vessel has left its radius of action before it has been able to transmit to her the wireless message, such station shall so notify the sender.

8. SPECIAL TELEGRAMS.

XXXIII.

The following telegrams shall not be accepted for transmission:

(a) Telegrams with answer prepaid;
(b) Money order telegrams;
(c) Telegrams calling for repetition of message (for purposes of verification);
(d) Telegrams calling for acknowledgment of receipt;
(e) Telegrams to be forwarded (if addressee is not found at the address given);
(f) Paid service telegrams, except in so far as transmission over the lines of the telegraph system is concerned;
(g) Urgent telegrams, except in so far as transmissions over the lines of the telegraph system is concerned, subject to the application of the provisions of the International Telegraph Regulations;
(h) Telegrams to be delivered by express or mail.

9. FILES.

XXXIV.

The originals of wireless telegrams and the documents thereto retained by the managements of the wireless telegraph service or by private enterprises shall be kept for a period of at least twelve months beginning with the month following that of the posting of the wireless telegram, with all the necessary precautions as regards secrecy.

Such originals and documents shall, as far as practicable, be sent at least once a month by the shipboard stations to the management of the wireless telegraph service to which they are subject.

10. REBATES AND REIMBURSEMENTS.

XXXV.

1. With regard to rebates and reimbursements, the provisions of the International Telegraph Regulations shall be applicable, taking into account the restrictions specified in Article XXXIII of the present Regulations and subject to the following reservations:

The time employed in the transmission of wireless telegrams and the time that wireless telegrams remain in a coastal station or station on shipboard shall not be counted as delays as regards rebates or reimbursements.

Reimbursements shall be borne by the different managements of the wireless telegragh service or private enterprises which have taken part in the transmission of the wireless telegram, each management or private enterprise relinquishing its share of the rate. Wireless telegrams to which articles 7 and 8 of the Convention of St. Petersburg are applicable shall remain subject, however, to the provisions of the International Telegraph Regulations, except when the acceptance of such telegrams is the result of an error made by the telegraph service.

2. When the acknowledgment of receipt of a wireless telegram has not reached the station which has transmitted the telegram, the charges shall be refunded only if the fact has been established that the wireless telegram is entitled to reimbursement.

11. ACCOUNTS AND PAYMENT OF CHARGES.

XXXVI.

1. The coastal and shipboard charges shall not enter into the accounts provided for by the International Telegraph Regulations.

The accounts regarding such charges shall be liquidated by the managements of the wireless telegraph service of the countries concerned. They shall be drawn up by the wireless telegraph management to which the coastal stations are subject, and communicated by them to the wireless telegraph managements concerned.

2. For transmission over the lines of the telegraph system wireless telegrams shall be treated, so far the payment of rates is concerned, in conformity with the International Telegraph Regulations.

3. For wireless telegrams proceeding from ships, the wireless telegraph management to which the shipboard station is subject shall be charged by the wireless telegraph management to which the coastal station is subject with the coastal and ordinary telegraph rates charged on board of vessels.

For wireless telegrams intended for ships, the wireless telegraph management which has collected the fees shall be charged directly by the wireless telegraph management to which the coastal station is subject with the coastal and shipboard rates. The latter shall credit the wireless telegraph management to which the vessel is subject with the shipboard rate.

In case the wireless telegraph management which has collected the charges is the same, however, as the one to which the shipboard station is subject, the shipboard rate shall not be charged by the wireless telegraph management to which the coastal station is subject.

4. The monthly accounts serving as a basis for the special accounts of wireless telegrams shall be made out for each telegram separately with all the necessary data within a period of six months from the month to which they refer.

5. The Governments reserve the right to enter into special agreements among themselves and with private enterprises (parties operating wireless telegraph stations, shipping companies, etc.) with a view of adopting other provisions with regard to accounts.

12. INTERNATIONAL BUREAU.

XXXVII.

The International Bureau of Telegraphs shall be entrusted with the duties specified in Article 13 of the Convention, subject to the consent of the Government of the Swiss Federation and the approval of the Telegraph Union.

The additional expenses resulting from the work of the International Bureau so far as wireless telegraphy is concerned shall not exceed 40,000 francs a year, exclusive of the special expenses arising from the convening of the International Conference.

These expenses shall form the subject of a special account, and the provisions of the International Telegraph Regulations shall be applicable to them. Before the convening of the next Conference, however, each contracting Government shall notify the International Bureau of the class in which it desires to be entered.

XXXVIII.

The management of the wireless telegraph service of the different countries shall forward to the International Bureau a table in conformity with the annexed blank, containing the data enumerated in said table for stations such as referred to in Article IV of the regulations. Changes occurring and additional data shall be forwarded by the wireless telegraph managements to the International Bureau between the 1st and 10th day of each month. With the aid of such data the International Bureau shall draw up a list which it shall keep up to date. The list and the supplements thereto shall be printed and distributed to the wireless telegraph managements of the countries concerned; they may also be sold to the public at the cost price.

The International Bureau shall see to it that the same call letters for several wireless telegraph stations shall not be adopted.

13. MISCELLANEOUS PROVISIONS.

XXXIX.

The managements of the wireless telegraph service shall give to agencies of maritime information such data regarding losses and casualties at sea or other information of general interest to navigation, as the coastal stations may properly report.

XL.

The exchange of correspondence between shipboard stations such as referred to in Article 1 of the Convention shall be carried on in such a manner as not to interfere with the service of the coastal stations, the latter, as a general rule, being accorded the right of priority for the public service.

XLI.

1. In the absence of special agreements between the parties concerned, the provisions of the present Regulations shall be applicable analogously to the exchange of wireless telegrams between two vessels at sea, subject to the following exceptions:

(a) To Article XIV. The shipboard rate falling to the transmitting ship shall be collected from the sender, and that falling to the receiving ship shall be collected from the addressee;

(b) To Article XVIII. The order of transmission shall be regulated in each case by mutual agreement between the corresponding stations.

(c) To Article XXXVI. The rates for the wireless telegrams in question shall not enter into the accounts provided for in that article, such charges falling to the wireless telegraph managements which have collected them.

2. Retransmission of wireless telegrams exchanged between vessels at sea shall be subject to special agreements between the parties concerned.

XLII.

The provisions of the International Telegraph Regulations shall be applicable analogously to wireless telegraph correspondence in so far as they are not contrary to the provisions of the present regulations.

In conformity with Article 11 of the Convention of Berlin, these Regulations shall go into effect on the first day of July, 1908.

In witness whereof the respective plenipotentiaries have signed one copy of the present Regulations, which shall be deposited in the archives of the Imperial Government of Germany, and a copy of which shall be transmitted to each of the Parties.

Done at Berlin, November 3, 1906.

For Germany:
KRAETKE.
SYDOW.
For United States:
CHARLEMAGNE TOWER.
H. N. MANNEY.
JAMES ALLEN.
JOHN I. WATERBURY.
For Argentina:
J. OLMI.
For Austria:
BARTH.
FRIES.
For Hungary:
PIERRE DE SZALAY.
DR. DE HENNYEY.
HOLLÓS.
For Belgium:
F. DELARGE.
E. BUELS.
For Brazil:
CESAR DE CAMPOS.
For Bulgaria:
IV. STOYANOVITCH.
For Chile:
J. MUÑOZ HURTADO.
J. MERY.
For Denmark:
N. R. MEYER.
I. A. VOEHTZ.
For Spain:
IGNACIO MURCIA.
RAMÓN ESTRADA.
RAFAEL RÁVENA.
ISIDRO CALVO.
MANUEL NORIÉGA.
ANTONIO PELÁEZ-CAMPOMANES.
For France:
J. BORDELONGUE.
L. GASCHARD.
BOULANGER.
A. DEVOS.
For Great Britain:
H. BABINGTON SMITH.
A. E. BETHELL.
R. L. HIPPISLEY.
For Greece:
T. ARGYROPOULOS.
For Italy:
J. COLOMBO.
For Japan:
OSUKE ASANO.
ROKURE YASHIRO.
SHUNKICHI KIMURA.
ZIRO TANAKA.
SABURO HYAKUTAKE.
For Mexico:
JOSÉ M. PÉREZ.
For Monaco:
J. DEPELLEY.
For Norway:
HEFTYE.
O. T. EIDEM.
For Netherlands:
KRUYT.
PERK.
HOVEN.
For Persia:
HOVHANNÈS KHAN.
For Portugal:
PAULOBENJAMINCABRAL.
For Roumania:
GR. CERKEZ.
For Russia:
A. EICHHOLZ.
A. EULER.
VICTOR BILIBINE.
A. REMMERT.
W. KÉDRINE.
For Sweden:
HERMAN RYDIN.
A. HAMILTON.
For Turkey:
NAZIF BEY.
For Uruguay:
F. A. COSTANZO.

[Supplement to Article XXXVIII of the Regulations.]

Wireless telegraph management of ------

Descriptive list of wireless telegraph stations.

- (a) COASTAL STATIONS.
  - Name.
  - Nationality.
  - Geographic location.
  - Call letters.
  - Normal range.
  - Wireless telegraph system.
  - Class of receiving apparatus (recording, acoustic, or other apparatus).
  - Wave lengths (the normal wave length to be underscored).
  - Nature of service furnished by station.
  - Hours during which station is open (indicating meridian to which they refer).
  - Coastal rate, stating minimum rate.
  - Remarks.
- (b) SHIPBOARD STATIONS.
  - Name.
  - Nationality.
  - Distinguishing signal of the international code of signals.
  - Name of home port.
  - Call letters.
  - Normal range.
  - Wireless telegraph system.
  - Class of receiving apparatus (recording, acoustic, or other apparatus).
  - Wave lengths (the normal wave length to be underscored).

- Nature of service furnished by station.
- Hours during which station is open.
- Shipboard rate, stating minimum rate. (1)War vessels (2) Merchant vessels.
- Remarks.

Extract from the International Telegraph Convention, signed at St. Petersburg, July 10/22, 1875.

[See Article 17 of the convention.]

ARTICLE 1.

The High Contracting Parties concede to all persons the right to correspond by means of the international telegraphs.

ARTICLE 2.

They bind themselves to take all the necessary measures for the purpose of insuring the secrecy of the correspondence and its safe transmission.

ARTICLE 3.

They declare, nevertheless, that they accept no responsibility as regards the international telegraph service.

ARTICLE 5.

Telegrams are classed in three categories:

1. State telegrams: those emanating from the Head of the Nation, the Ministers, the Commanders-in-Chief of the Army and Naval forces, and the Diplomatic or Consular Agents of the Contracting Governments, as well as the answers to such telegrams.
2. Service telegrams: those which emanate from the Managements of the Telegraph Service of the Contracting States and which relate either to the international telegraph service or to subjects of public interest determined jointly by such Managements.
3. Private telegrams.

In the transmission, the State telegrams shall have precedence over other telegrams.

ARTICLE 6.

State telegrams and service telegrams may be issued in secret language, in any communications.

Private telegrams may be exchanged in secret language between two States which admit of this mode of correspondence.

The States which do not admit of private telegrams in secret language upon the expedition or arrival of the same, shall allow them to pass in transit, except in the case of suspension defined in article 8.

ARTICLE 7.

The High Contracting Parties reserve the right to stop the transmission of any private telegram which may appear dangerous to the safety of the State, or which may be contrary to the laws of the country, to public order or good morals.

ARTICLE 8.

Each Government also reserves the right to suspend the international telegraph service for an indefinite period, if deemed necessary by it, either generally, or only over certain lines and for certain classes of correspondence, of which such Government shall immediately notify all other Contracting Governments.

ARTICLE 11.

Telegrams relating to the international telegraph service of the Contracting States shall be transmitted free of charge over the entire system of such States.

ARTICLE 12.

The High Contracting Parties shall render accounts to one another of the charges collected by each of them.

ARTICLE 17.

The High Contracting Parties reserve respectively the right to enter among themselves into special arrangements of any kind with regard to points of the service which do not interest the States generally.

- United States Early Radio History

Act to Require Apparatus and Operators for Radio Communication on Certain Ocean Steamers, June 24, 1910.

Text of the "Act to require apparatus and operators for radio communication on certain ocean steamers". The original act, approved June 24, 1910 and effective July 1, 1911, required certain ocean-going ships, of all nationalities, to carry radio equipment when visiting U.S. ports, and to exchange messages with other vessels, regardless of the system used. The original act only applied to ocean-going vessels, and also only required a single radio operator. On July 23, 1912 the original act was amended. Among the changes were the inclusion of vessels on the Great Lakes, coverage of all ships licenced for 50 passengers and crew (whether they were carrying that many or not), and a requirement for a continuous watch, with at least two operators. Neither act required station licences, but they did require ships to use certified radio operators. [The text for this page came from the 1911 and 1915 editions of "Navigation Laws of the United States", published by the Washington Government Printing Office].

An act approved June 24, 1910 entitled "An Act to require apparatus and operators for radio communication on certain ocean steamers."

Operators.

SEC. 1. That from and after the first day of July, nineteen hundred and eleven, it shall be unlawful for any ocean-going steamer of the United States, or of any foreign country, carrying passengers and carrying fifty or more persons, including passengers or crew, to leave or attempt to leave any port of the United States unless such steamer shall be equipped with an efficient apparatus for radio-communication, in good working order, in charge of a person skilled in the use of such apparatus, which apparatus shall be capable of transmitting and receiving messages over a distance of at least one hundred miles, night or day: *Provided*, That the provisions of this Act shall not apply to steamers plying only between ports less than two hundred miles apart.

SEC. 2. That for the purpose of this Act apparatus for radio-communication shall not be deemed to be efficient unless the company installing it shall contract in writing to exchange, and shall, in fact, exchange, as far as may be physically practicable, to be determined by the master of the vessel, messages with shore or ship stations using other systems of radio-communication.

Penalty.

SEC. 3. That the master or other person being in charge of any such vessel which leaves or attempts to leave any port of the United States in violation of any of the provisions of this Act shall, upon conviction, be fined in a sum not more than five thousand dollars, and any such fine shall be a lien upon such vessel, and such vessel may be libeled therefor in any district court of the United States within the jurisdiction of which such vessel shall arrive or depart, and the leaving or attempting to leave each and every port of the United States shall constitute a separate offense.

SEC. 4. That the Secretary of Commerce and Labor shall make such regulations as may be necessary to secure the proper execution of this Act by collectors of customs and other officers of the Government.

The Act was amended July 23, 1912. The first section of the Act was rewritten, and a paragraph was added to the beginning of the second section. (The rest of Section 2, plus Sections 3 and 4, listed above, were left unchanged):

Auxiliary.

Operators.

Penalty.

SEC. 1. That from and after October first, nineteen hundred and twelve, it shall be unlawful for any steamer of the United States or of any foreign country navigating the ocean or the Great Lakes and licensed to carry, or carrying, fifty or more persons, including passengers or crew or both, to leave or attempt to leave any port of the United States unless such steamer shall be equipped with an efficient apparatus for radio communication, in good working order, capable of transmitting and receiving messages over a distance of at least one hundred miles, day or night. An auxiliary power supply, independent of the vessel's main electric power plant, must be provided which will enable the sending set for at least four hours to send messages over a distance of at least one hundred miles, day or night, and efficient communication between the operator in the radio room and the bridge shall be maintained at all times.

The radio equipment must be in charge of two or more persons skilled in the use of such apparatus, one or the other of whom shall be on duty at all times while the vessel is being navigated. Such equipment, operators, the regulation of their watches, and the transmission and receipt of messages, except as may be regulated by law or international agreement, shall be under the control of the master, in the case of a vessel of the United States; and every willful failure on the part of the master to enforce at sea the provisions of this paragraph as to equipment, operators, and watches shall subject him to a penalty of one hundred dollars.

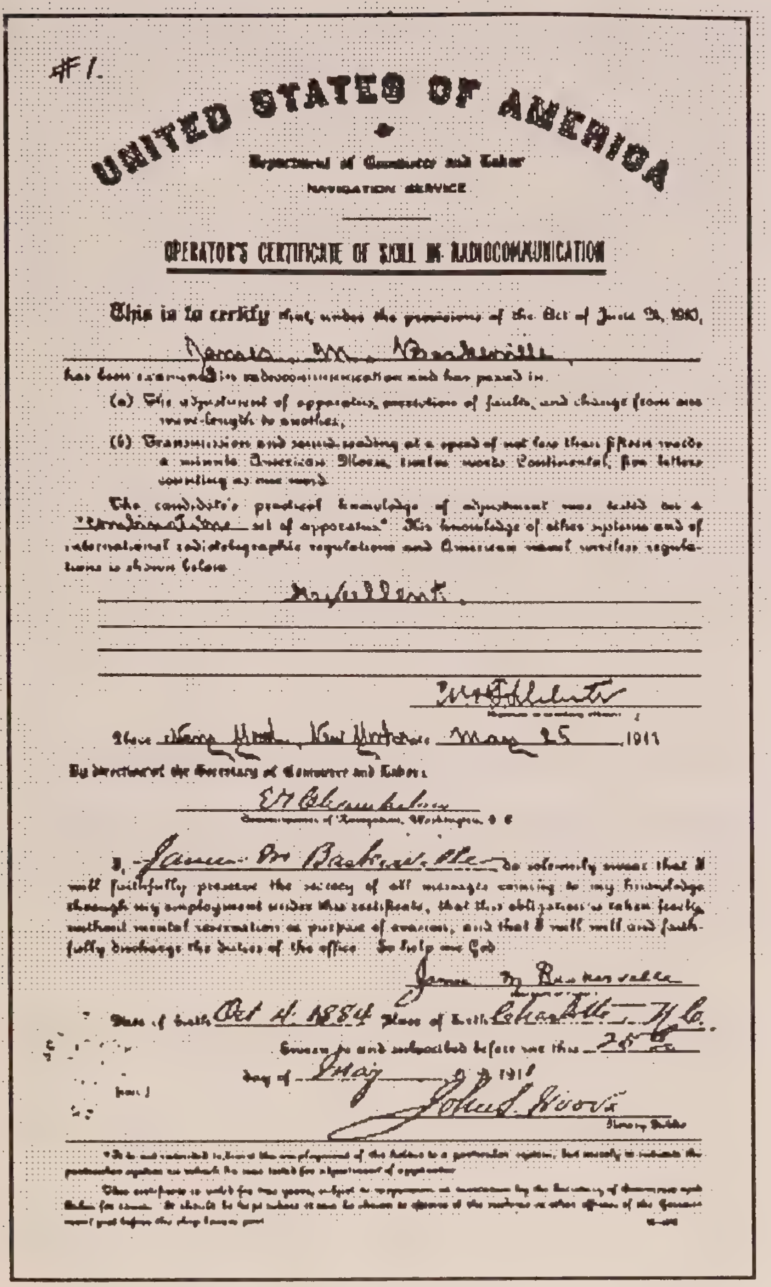
That the provisions of this section shall not apply to steamers plying between ports, or places, less than two hundred miles apart.

Cargo Operators.

SEC. 2. That this Act, so far as it relates to the Great Lakes, shall take effect on and after April first, nineteen hundred and thirteen, and so far as it relates to ocean cargo steamers shall take effect on and after July first, nineteen hundred and thirteen: *Provided*, That on cargo steamers, in lieu of the second operator provided for in this Act, there may be substituted a member of the crew or other person who shall be duly certified and entered in the ship's log as competent to receive and understand distress calls or other usual calls indicating danger, and to aid in maintaining a constant wireless watch so far as required for the safety of life.

- United States Early Radio History

Operator's Certificate of Skill in Radiocommunication, per the June 24, 1910 Act.



#1.

UNITED STATES OF AMERICA

Department of Commerce and Labor

NAVIGATION SERVICE

OPERATOR'S CERTIFICATE OF SKILL IN RADIOCOMMUNICATION

This is to certify that, under the provisions of the Act of June 24, 1910,
James M. Baskerville
has been examined in radiocommunication and has passed in

(a) The adjustment of apparatus, correction of faults, and change from one wave-length to another;

(b) Transmission and sound-reading at a speed of not less than fifteen words a minute American Morse, twelve words Continental, five letters counting as one word.

The candidate's practical knowledge of adjustment was tested on a "[illegible]" set of apparatus.* His knowledge of other systems and of international radiotelegraphic regulations and American naval wireless regulations is shown below:

Excellent.

Place New York, New York. May 25 1911

By direction of the Secretary of Commerce and Labor:

E T Chamberlain

Commissioner of Navigation, Washington, D. C.

I, James M. Baskerville do solemnly swear that I will faithfully preserve the secrecy of all messages coming to my knowledge through my employment under this certificate, that this obligation is taken freely without mental reservation or purpose of evasion, and that I will well and faithfully discharge the duties of the office. So help me God.

James M. Baskerville

Date of birth Oct 4. 1884 Place of birth Charlotte N. C.

Sworn to and subscribed before me this 25th day of May 1911

[SEAL.]

Notary Public

Ships that came under the provisions of the June 24, 1910 "Act to require apparatus and operators for radio communication on certain ocean steamers" had to have certified operators by the act's July 1, 1911 effective date. The Department of Commerce and Labor set up a certification program, where qualified individuals could earn a two-year "Operator's Certificate of Skill in Radiocommunication".

The displayed certificate was issued on May 25, 1911 to James M. Baskerville after being tested in New York, New York, and appeared in the May, 1926 issue of *Radio Broadcasting*, in an article entitled "Breaking Into the Wireless Game". According to the article, this was the first operator's certificate issued under the new program.

- United States Early Radio History

Selected Extracts from the Annual Report of the Commissioner of Navigation to the Secretary of Commerce and Labor for the Fiscal Year Ended June 30, 1910.

Selected extracts about radio from the *Annual Report of the Commissioner of Navigation to the Secretary of Commerce and Labor for the Fiscal Year Ended June 30, 1910.* (Submitted November 30, 1910 from Commissioner Eugene Tyler Chamberlain to Secretary Charles Nagel).

Pages 27-28:

WIRELESS ON SHIPS.

By the act of July 24, 1910, Congress has provided that on and after July 1, 1911, every ocean-going passenger steamer carrying 50 or more persons for a voyage of 200 miles or more between ports must be equipped with efficient wireless apparatus and a skilled operator, the apparatus to be capable of transmitting and receiving messages at least 100 nautical miles by night or day. This act is a useful measure for the promotion of the safety of life and property at sea and the adoption of a similar measure by other maritime nations is doubtless a matter of but a short time.

Appendix M contains a statement of the vessels to be subject to the law which are already equipped to meet its requirements and of those not yet equipped. The statements contained therein are based on the reports of collectors of customs on September 1, 1910, but of course by July 1, 1911 the situation will have materially changed. The statements show that 370 ocean passenger steamers are already equipped with wireless apparatus and that 185 are not yet so equipped. The act also prescribes that companies installing wireless apparatus shall contract in writing to exchange and shall in fact exchange messages with shore or ship stations using other systems of radio-communication. By this provision of the law Congress has taken an important step toward the enforcement of the principal article of the Berlin Wireless Convention of 1906. The two companies which have equipped 313 of the 370 vessels have already begun to provide in their contracts for a complete compliance with this requirement of the statute. In fact, on the part of both shipowners and the wireless companies, the disposition has been manifested in advance to comply with the law and to cooperate with the Department in securing its efficient enforcement.

The act prescribes that the Secretary of Commerce and Labor shall make such regulations as may be necessary to secure the proper execution of the law. With a view to the preparation of such regulations, the Bureau has been in correspondence with the wireless companies and with steamship owners so that the regulations may be prepared in ample time to be fully known and understood before the act takes effect, on the 1st of July.

There seems to be no reason to apprehend that there will be a lack of skilled wireless operators, and enough companies are prepared to furnish the necessary installations to lead to the conclusion that monopoly and extortionate rates will not result from the act.

To enforce the law a small appropriation will be necessary, and the Department estimates accordingly carry an item of $10,000 for this purpose. Of the 555 vessels required to be equipped, 320 clear from New York, and it will be necessary accordingly to have at least one wireless inspector, and probably two, stationed at that port. Men competent to perform this work can not be obtained at a salary less than $1,500. Possibly the work at other North Atlantic ports can be performed by one inspector, but an allowance must be made for traveling expenses in that event. The same situation applies to ports on the Gulf of Mexico and on the Pacific coast. A small amount may also be required for testing apparatus, so that the sum of $10,000 seems to be the least amount for which the work can be performed during the first year.

WIRELESS REGULATION.

While the Congress of the United States is the first legislative body to require the installation of wireless apparatus on ocean passenger ships, other nations are in advance of the United States in the other essential matter of the regulation of radio-communication. A bill for the regulation of radio-communication, however (S. 7243), passed the Senate on June 17, 1910, and a bill similar in all essential respects (H. R. 23595) was reported favorably to the House at the last session and holds an advanced place on the calendar. The House bill differs from the bill which passed the Senate in only one considerable matter, viz, it prescribes license fees for wireless stations, and this requirement may well be omitted. The bill was drawn after careful consultation of representatives of the Treasury Department, the War Department, the Navy Department, and the Department of Commerce and Labor, and has been cordially approved by those departments. The reasons for the passage of the bill are fully set forth in Senate Report No. 659, and House Report No. 924, Sixty-first Congress, second session, and its passage is earnestly recommended.

The bill is drawn to avoid the difficulties which have hitherto stood in the way of the ratification by the United States of the Berlin Wireless Convention of 1906, which has met the approval of practically all other maritime nations.

While the act of June 18, 1910, to create a commerce court, brings wireless companies within the scope of the interstate-commerce act, the Bureau understands that only the charges of wireless companies are covered by that act, and the desirability of the passage of the bill referred to is not for this reason lessened.

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APPENDIX M.

WIRELESS ON SHIPS.

1. [Text of the June 24, 1910 "Act to require apparatus and operators for radio communication on certain ocean steamers".]

With a view to ascertaining to what extent wireless telegraphy is employed on vessels, collectors of customs on the Atlantic, Pacific, and Gulf coasts were requested to submit not later than September 1, 1910, a statement of vessels equipped with wireless and those which are not equipped, the statement of vessels equipped giving the name of the system of equipment, whether the equipment is owned by the steamer or leased, the wave length in meters, range in nautical miles, the power in kilowatts, and the call letters, which information is given in the following tables.

Where the same vessel appeared at different ports it appears in the following tabulation at but one port:

2. Passenger Steamers Subject to the Wireless Act of June 24, 1910, by Nationalities.

Nationality.	Equipped.	Not equipped.	Total.
American.	149	63	212
British.	89	58	147
German.	43	23	66
Italian.	28	---	28
French.	15	7	22
Austrian.	9	---	9
Dutch.	6	12	18
Belgian.	6	1	7
Japanese.	5	6	11
Danish.	4	---	4
Norwegian.	4	---	4
Russian.	4	---	4
Greek.	3	---	3
Brazilian.	3	---	3
Honduranean.	2	---	2
Spanish.	---	11	11
Cuban.	---	3	3
Uruguayan.	---	1	1
Total.	370	185	555

3. Passenger Steamers Subject to the Wireless Act of June 24, 1910, by Ports.

Port.	Equipped.	Not equipped.	Total.
New York.	247	73	320
San Francisco.	31	29	60
Port Townsend.	26	27	53
New Orleans.	22	8	30
Fall River.	19	---	19
Boston.	12	8	20
Philadelphia.	8	3	11
Tampa.	2	---	2
Baltimore.	1	27	28
Key West.	1	---	1
Coos Bay.	1	---	1
San Juan, P. R.	---	10	10
Total.	370	185	555

4. Summary of Vessels Equipped with Wireless.

Line.	Flag.	Vessels.
Hamburg-American Line.	German.	21
New England Navigation Co.	American.	19
North German Lloyd.	German.	18
Leyland Line.	British.	14
White Star Line.	do.	12
Mallory Steamship Co.	American.	12
Pacific Coast Steamship Co.	do.	11
Cunard Steamship Co.	British.	11
Compagnie Generale Transatlantique.	French.	10
United Fruit Co.	British.	10
Royal Mail Steam Packet Co.	do.	10
Clyde Steamship Co.	American.	9
New York and Cuba Mail Steammship Co.	do.	9
Ocean Steamship Co. of Savannah	do.	9
Austro Americana.	Austrian.	9
Atlantic Transport Line.	British.	8
Allan Line.	do.	8
Navigazione Generale Italiana.	Italian.	8
Alaska Steamship Line.	American.	8
Lloyd Italiano.	Italian.	7
Pacific Mail Steamship Co.	American.	6
Holland-America Line.	Dutch.	6
Panama Railroad Steamship Co.	American.	6
Red Star Line.	Belgian.	6
Lloyd Sabaudo.	Italian.	5
Nippon Yusen Kaisha.	Japanese.	5
Old Dominion Steamship Co.	American.	5
Southern Pacific Co.	do.	5
Fabre Line.	French.	5
San Francisco and Portland Steamship Co.	American	4
Hamburg-American Line (Atlas Service).	German.	4
Anchor Line.	British.	4
Det Forenede Dampskibs-Selskab.	Danish.	4
American Line.	American.	4
Canadian Pacific Railway Co.	British.	4
Russian East Asiatic Steamship Co.	Russian.	4
Porto Rico Line.	American.	4
Italia Societa di Navigazione a Vapore.	Italian.	3
Peninsular and Occidental Steamship Co.	American.	3
Alaska Pacific Steamship Co.	do.	3
Eastern Steamship Co.	do.	3
American Mail Steamship Co.	do.	3
Lloyd Brazileiro.	Brazilian.	3
La Veloce.	Italian.	3
C. P. Doe.	American.	3
Matson Navigation Co.	do.	3
Sicula Americana.	Italian.	2
Inter-Ocean Transportation Co.	American.	2
Alaska Coast Co.	do.	2
Merchants and Miners Transportation Co.	do.	2
Vaccaro Bros. & Co.	Honduranean.	2
O. & A. Irgens.	Norwegian.	2
Norway, Mexico and Gulf Steamship Co.	do.	2
Metropolitan Steamship Co.	American.	2
Red "D" Line.	do.	2
Lamport & Holt.	British.	2
Red Cross Line.	do.	2
Maine Steamship Co.	American.	2
American Line.	British.	2
Hellentic Transatlantic Steam Navigation Co.	Greek.	2
Oceanic Steamship Co.	American.	2
Charles McCormick.	do.	1
Independent Steamship Co.	do.	1
National Steam Naviga- Co. of Greece.	Greek.	1
Black Diamond Steamship Line.	British.	1
Red Star Line.	do.	1
Insular Line.	American.	1
Humboldt Steamship Co.	do.	1
Great Northern Steamship Co.	do.	1
Sudden & Christensen.	do.	1
Total.		370

5. Vessels Equipped with Wireless.

ARRIVING AT NEW YORK.

Name of line and vessel.	System.	Wave length.	Range.	Power.	Call letters.

		Meters.	*Nautical miles.*	*Kilowatts.*	
Metropolitan Steamship Co. (American):					
Harvard.	Marconi.	300	100	0.35	MGH
Yale.	do.	300	100	.35	MGY
American Line (American):					
Philadelphia.	do.	300-600	250	2.00	MPH
St. Paul.	do.	300-600	150	.35	MSP
St. Louis.	do.	300-600	150	.35	MSL
New York.	do.	300-600	150	.35	MNK
Southern Pacific Co. (Atlantic Steamship) (American):					
Creole.	United.	506	*a* 100	1.00	KR
Antilles.	do.	410	*a* 100	1.00	KA
Momus.	do.	391	*a* 100	1.00	KM
Comus.	do.	430	*a* 100	1.00	KD
Proteus.	do.	445	*a* 100	1.00	KP
Insular Line (American):					
S. V. Luckenbach.	do.	490	200	2.00	YA
Old Dominion Steamship Co. (American):					
Monroe.	do.	252	100	1.00	OM
Jefferson.	do.	245	100	1.00	OD
Hamilton.	do.	315	100	1.00	OA
Princess Anne.	do.	260	100	1.00	OB
Jamestown.	do.	330	100	1.00	OC
Red "D" Line (American):					
Philadelphia.	do.	398	200	1.00	DA
Caracas.	do.	377	200	1.00	DB
Mallory Steamship Co. (American):					
Brazos.	do.	360	200	1.00	AZ
San Jacinto.	do.	470	200	1.00	AS
Denver.	do.	462	200	1.00	AD
Concho.	do.	360	200	1.00	AC
Neuces.	do.	362	200	1.00	AH
Lampasas.	do.	471	200	1.00	AP
Alamo.	do.	414	200	1.00	AJ
Comal.	do.	410	200	1.00	AM
Sabine.	do.	370	200	1.00	AB
Rio Grande.	do.	366	200	1.00	AG
San Marcos.	do.	406	200	1.00	AK
Colorado.	do.	381	200	1.00	AF
Clyde Steamship Co. (American):					
Cherokee.	do.	356	200	1.00	VK
Seminole.	do.	281	200	1.00	VJ
Mohawk.	do.	410	200	1.00	VM
Apache.	do.	389	200	1.00	VA
Comanche.	do.	469	200	1.00	VC
Iroquois.	do.	414	200	1.00	VF
Algonquin.	do.	414	200	1.00	VG
Huron.	do.	329	200	1.00	VN
Arapahoe.	do.	414	200	1.00	VB
New York and Cuba Mail Steamship Co. (American):					
Havana.	do.	531	200	1.00	WH
Saratoga.	do.	580	200	1.00	WS
Mexico.	do.	553	200	1.00	WX
Merida.	do.	487	200	1.00	WM
Morro Castle.	do.	400	200	1.00	WC
Esperanza.	do.	423	200	1.00	WZ
Monterey.	do.	414	200	1.00	WY
Vigilancia.	do.	423	200	1.00	WV

Vigilancia.	do.	423	200	1.00	WV
Seguranca.	do.	330	200	1.00	WG
Ocean Steamship Co. of Savannah (American):					
City of Montgomery.	do.	459	200	1.00	FY
City of St. Louis.	do.	414	200	1.00	FX
City of Columbus.	do.	460	200	1.00	FA
City of Atlanta.	do.	430	200	1.00	FB
City of Savannah.	do.	442	200	1.00	FK
City of Memphis.	do.	475	200	1.00	FD
City of Augusta.	do.	510	200	1.00	FJ
City of Macon.	do.	430	200	1.00	FC
Nacoochee.	do.	430	200	1.00	FP
Porto Rico Line (American):					
Coamo.	do.	545	200	1.00	CA
Carolina.	do.	531	200	1.00	CB
San Juan.	do.	430	200	1.00	CJ
Ponce.	do.	436	200	1.00	CP
Panama Railroad steamships (American):					
Allianca.	do.	414	200	2.00	MA
Cristobal.	do.	414	200	2.00	MD
Panama.	do.	423	200	1.00	MH
Ancon.	do.	519	200	2.00	MS
Advance.	do.	345	200	1.00	MV
Colon.	do.	414	200	1.00	MX
Maine Steamship Co. (American):					
North Land.	do.	305	150	1.00	JD
North Star.	do.	374	150	1.00	JS
Austro-American (Austrian):					
Alice.	Marconi.	500	160	Coil set.	MUL
Argentina.	do.	500	150	Coil set.	MUG
Laura.	do.	500	160	Coil set.	MUR
Martha Washington.	do.	500	160	Coil set.	MUW
Oceania.	do.	500	160	Coil set.	MUO
Atlanta.	Telefunken.	300-450-600	300	1.50	OAA
Columbia.	do.	300-450-600	300	1.50	OAC
Francesca.	do.	300-450-600	300	1.50	MUF
Sofia Hohenberg.	do.	300-450-600	300	1.50	OAH
Red Star Line (Belgian):					
Finland.	Marconi.	110-300-600	140	.35	MFD
Gothland.	do.	110-300-600	140	.35	MHD
Kroonland.	do.	110-300-600	140	.35	MKD
Lapland.	do.	110-300-600	140	.35	MPD
Samland.	do.	110-300-600	140	.35	MYD
Vaderland.	do.	110-300-600	140	.35	MVD
Lloyd Brazileiro (Brazilian):					
São Paulo.	United.	430	200	2.00	UWK
Minas Geraes.	do.	487	200	2.00	UWN
Rio de Janeiro.	do.	435	200	2.00	UWR
Red Star Line (British):					
Zeeland.	Marconi.	110-300-600	140	.35	MZD
Lamport & Holt (British):					
Verdi.	United.	480	200	2.00	UVD
Vasari.	do.	463	200	2.00	UVR
Red Cross Line (British):					
Bornu.	Marconi.	1,200	300	1.50	MZB
Florizel.	do.	1,200	300	1.50	MZL
Black Diamond Steamship Line (British):					
Rosalind.	do.	1,200	300	1.50	MZR
United Fruit Co. (British):					

United Fruit Co. (British):					
Almirante.	Fessenden.*b*	500	350	2.00	UN
Santa Marta.	do.	500	350	2.00	UX
Zacapa.	do.	500	350	2.00	UZ
Metapan.	do.	500	350	2.00	UVA
Cunard Steamship Co. (British):					
Campania.	Marconi.	300-600	100	.35	MCA
Carmania.	do.	300-600	100	.35	MAA
Carpathia.	do.	300-600	100	.35	MPA
Ivernia.	do.	300-600	100	.35	MIA
Pannonia.	do.	300-600	100	.35	MNA
Saxonia.	do.	300-600	100	.35	MSA
Ultonia.	do.	300-600	100	.35	MTA
Lusitania.	do.	300-600	250	1.50	MFA
Mauretania.	do.	300-600	250	1.50	MGA
Franconla.	do.	300-600	250	1.50	MEA
Caronia.	do.	300-600	350	5.00	MRA
American Line (British):					
Haverford.	do.	300-600	150	.35	MJH
Merion.	do.	300-600	150	.35	MJM
Anchor Line (British):					
Columbia.	do.	300-600	150	.35	MOI
Caledonla.	do.	300-600	150	.35	MAI
California.	do.	300-600	150	.35	MCI
Furnessia.	do.	300-600	150	.35	MFI
White Star Line (British):					
Adriatic.	do.	300-600	150	.35	MHC
Majestic.	do.	300-600	150	.35	MMC
Oceanic.	do.	300-600	150	.35	MOC
Teutonic.	do.	300-600	150	.35	MTC
Baltic.	do.	300-600	150	.35	MBC
Cedric.	do.	300-600	150	.35	MDC
Celtic.	do.	300-600	150	.35	MLC
Arabic.	do.	300-600	150	.35	MFC
Cymric.	do.	300-600	150	.35	MGC
Cretic.	do.	300-600	150	1.50	MRC
Canopic.	do.	300-600	150	1.50	MPC
Romanic.	do.	300-600	150	1.50	MNC
Atlantic Transport Line (British):					
Minneapolis.	do.	300-110	100	.35	MMN
Minnehaha.	do.	300-110	100	.35	MMA
Minnetonka.	do.	300-110	100	.35	MMK
Minnewaska.	do.	600-300	200	1.50	MMW
Mesaba.	do.	600-300	150	.35	MMV
Manitou.	do.	600-300	150	.35	MNM
Marquette.	do.	600-300	150	.35	MNQ
Menominee.	do.	600-300	150	.35	MNE
Royal Mail Steam Packet Co. (British):					
Oruba.	United.	462	200	2.00	RNU
Tagus.	do.	621	200	2.00	RNS
Trent.	do.	414	200	1.00	RNR
Atrato.	do.	610	200	2.00	RNA
Magdalena.	do.	600	200	2.00	RND
Nile.	do.	600	200	2.00	RNJ
Clyde.	do.	600	200	2.00	RNK
Thames.	do.	600	200	2.00	RNM
Oroatva.	do.	538	200	2.00	RNV
Ortona.	do.	600	200	2.00	RNQ
Det Forenede Dampskibs-Selskab (Danish):					
C. F. Tietgen.	De Forest.*b*	300-600	220	1.50	DCF

C. F. Tietgen.	De Forest.*b*	300-600	220	1.50	DCF
Hellig Olav.	do.	300-600	220	1.50	DHO
Oscar II.	do.	300-600	220	1.50	DOR
United States.	do.	300-600	220	1.50	DUS
Holland-America Line (Dutch):					
Nieuw Amsterdam.	Marconi.	120-300-600	220	1.00	MHB
Noordam.	do.	120-300-600	175	.35	MHA
Potsdam.	do.	120-300-600	175	.35	MHM
Rijndam.	do.	120-300-600	175	.35	MHY
Rotterdam.	do.	120-300-600	220	1.00	MHR
Statendam.	do.	120-300-600	175	.35	MHS
Fabre Line (French):					
Roma.	do.	300-600	150	.45	MRB
Germania.	do.	300-600	150	.45	MGE
Madonna.	do.	300-600	150	.45	MMB
Venezia.	do.	300-600	150	.45	MVZ
St. Anna.	do.	300-600	500	1.50	MSS
Compagnie Generale Transatlantique (French):					
La Provence.	do.	300-600	150-300	5.00	MLP
La Savoie.	do.	300-600	150-300	5.00	MLS
La Lorraine.	do.	300-600	150-300	5.00	MLL
La Touraine.	do.	300-600	150-300	5.00	MLT
La Gascogne.	do.	300-600	150-300	5.00	MLG
La Bretagne.	do.	300-600	150-300	5.00	MLB
Chicago.	do.	300-600	150-300	5.00	MLY
Caroline.	do.	300-600	150-300	5.00	MSO
Floride.	do.	300-600	150-300	5.00	MSR
Niagara.	do.	300-600	150-300	5.00	MSQ
Hamburg American Line, Atlas Service (German):					
Prinz August Wilheim.	United.	471	200	1.00	SB
Prinz Eitel Friedrich.	do.	471	200	1.00	SF
Prinz Joachim.	do.	445	200	1.00	SP
Prinz Sigismund.	do.	519	200	1.00	SG
Hamburg American Line (German):					
Kaiserin Auguste Victoria.	Marconi.	110-300-600	220	1.00	DDA
Amerika.	do.	110-300-600	220	1.00	DDR
Deutschland.	do.	300-600	220	1.00	DDL
Cleveland.	do.	110-300-600	220	1.00	DDV
Cincinnati.	do.	110-300-600	220	1.00	DDC
Moltke.	do.	300-600	175	.35	DDM
Bluecher.	do.	300-600	220	1.00	DDB
Oceana.	United.	560	200	1.00	SK
President Grant.	Marconi.	300-600	175	.35	DDS
President Lincoln.	do.	300-600	175	.35	DDI
Prinz Adalbert.	do.	300-600	140	.35	DDZ
Hamburg.	do.	300-600	175	.35	DDH
Graf Waldersee.	do.	300-600	175	.35	DDW
Patricia.	do.	300-600	175	.35	DDP
Pennsylvania.	do.	300-600	175	.35	DDN
Pretoria.	do.	300-600	175	.35	DDT
Batavia.	do.	300-600	175	.35	DDJ
Prinz Oskar.	do.	300-600	140	.35	DDO
Pallanza.	do.	300-450-600	175	1.00	DDQ
Pisa.	do.	300-450-600	175	1.00	DDF
Bulgaria.	do.	300-600	175	.35	DDG
North German Lloyd (German):					
Barbarossa.	do.	300-600	175	.35	DKS
Berlin.	do.	110-300-600	220	1.00	DKB
Friedrich der Grosse.	do.	300-600	175	.35	DKD
George Washington.	do.	110-300-600	220	1.00	DKN

George Washington.	do.	110-300-600	220	1.00	DKN
Grosser Kurfurst.	do.	300-600	175	.35	DKG
Kaiser Wilhelm der Grosse.	do.	110-300-600	220	1.00	DKW
Kaiser Wilhelm II.	do.	110-300-600	220	1.00	DKM
Konig Albert.	do.	300-600	175	.35	DKO
Konigin Luise.	do.	300-600	175	.35	DKL
Kronprinzessin Cecilie.	do.	110-300-600	220	1.00	DKA
Kronprinz Wilhelm.	do.	110-300-600	220	1.00	DKP
Main.	do.	300-600	175	.35	DKI
Neckar.	do.	300-600	175	.35	DKK
Prinzess Alice.	do.	300-600	175	.35	DKZ
Prinzess Irene.	do.	300-600	175	.35	DKE
Prinz Friedrich Wilhelm.	do.	110-300-600	220	1.00	DKF
Rhein.	do.	300-600	175	.35	DKR
Bremen.	Telefunken.	300-600	110	---	DBR
National Steam Navigation (Ltd.): of Greece (Greek):					
Patris.	Marconi.	300-600	140	.35	MPT
Hellenic Transatlantic Steam Navigation Co. (Ltd.) (Greek):					
Athinai.	do.	300-600	140	.35	MTI
Themistocles.	do.	300-600	140	.35	MTH
Sicula Americana (Italian):					
San Giorgio.	do.	300-600	140	.35	MSH
San Giovanni.	do.	300-600	140	.35	MSF
Italia Societa di Navigazione a Vapore (Italian):					
Verona.	do.	300-600	400-450	5.00	MOV
Ancona.	do.	300-600	400-450	5.00	MOA
Taormina.	do.	300-600	400-450	5.00	MOT
Navigazione Generale-Italiana (Italian):					
Duca Degil Abruzzi.	do.	300-600	400-500	5.00	MAD
Duca di Genova.	do.	300-600	400-500	5.00	MAE
Sannio.	do.	300-600	140	.50	MRF
Lazio.	do.	300-600	140	.50	MRZ
Lombardia.	do.	300-600	200-250	1.50	MAB
Liguria.	do.	300-600	200-250	1.50	MAL
Duca d'Aosta.	do.	300-600	400-450	5.00	MAO
La Veloce (Italian):					
America.	do.	300-360	400-450	5.00	MVS
Europa.	do.	300-360	150	.50	MVE
Oceania.	do.	300-360	400-450	5.00	RFNT
Lloyd Italiano (Italian):					
Florida.	do.	300-800	*c* 250	1.50	MAV
Indiana.	do.	300-800	*c* 250	1.50	MAK
Luisiana.	do.	300-800	*c* 250	1.50	MAM
Virginia.	do.	300-800	*c* 250	1.50	MAH
Mendoza.	do.	300-800	*c* 250	1.50	MAF
Cordova.	do.	300-800	*c* 250	1.50	MAG
P. Mafalda.	do.	600-1,500	*c* 500	5.00	MIM
Lloyd Sabaudo (Italian):					
Principe di Udine.	do.	300-600	400-450	5.00	MRV
Tomaso di Savoia.	do.	300-600	150	.50	MRS
Re'd Italia.	do.	300-600	150	.50	MRI
Regina d'Italia.	do.	300-600	150	.50	MRC
Principe di Piemonte.	do.	300-600	150	.50	MRP
Russian American Line (Russian East Asiatic Steamship Co.)(Russian):					
Russia.	De Forest.*d*	300-600	*e* 300-400	2.00	SRN
Lituania.	do.	300-600	*e* 300-400	2.00	SLA

Lituania.	do.	300-600	*e* 300-400	2.00	SLA
Birma.	do.	300-600	*e* 300-400	2.00	SBA
Estonia.	do.	300-600	*e* 300-400	2.00	SEA

[a] Or more. [b] Owned. [c] Minimum. [d] Owned. The Amalgamated Radio Telegraph. [e] At night.

ARRIVING AT SAN FRANCISCO.

Name of line and vessel.	System.	Wave length.	Range.	Power.	Call letters.
Pacific Mail Steamship Co. (American):		*Meters.*	*Nautical miles.*	*Kilowatts.*	
Asia.	United.	---	1,200-1,800	5.00, 1.00	WT
China.	do.	---	1,200-1,800	5.00, 1.00	WA
Korea.	do.	---	1,000-2,000	5.00, 2.00	WK
Manchuria.	do.	---	1,200-1,800	5.00, 1.00	WE
Mongolia.	do.	---	1,200-1,800	5.00, 1.00	WN
Siberia.	do.	---	1,200-1,800	5.00, 1.00	WU
San Francisco and Portland Steamship Co. (American):					
Bear.	do.	---	500-800	1.00	WD
Beaver.	do.	---	500-800	1.00	WB
Kansas City.	do.	---	500-800	1.00	AX
Rose City.	Massie.	---	500-800	1.00	H2
Pacific Coast Co. (American):					
City of Puebla.	United.	---	500-1,000	1.00	GQ
Governor.	do.	---	1,000-1,600	2.00	GV
President.	do.	---	1,000-1,600	2.00	GW
Queen.	do.	---	500-1,000	1.00	GX
Santa Rosa.	do.	---	500-1,000	1.00	GI
Senator.	do.	---	500-1,000	1.00	GS
Spokane.	do.	---	500-1,000	1.00	GE
State of California.	do.	---	500-1,000	1.00	GL
Umatilla.	do.	---	900-1,500	2.00	GU
Independent Steamship Co. (American):					
Hanalei.	do.	---	500-800	1.00	HN
C. P. Doe (American):					
George W. Elder.	do.	---	500-800	1.00	AY
Roanoke.	do.	---	500-800	1.00	AQ
Santa Clara.	do.	---	580-800	1.00	AK
Matson Navigation Co. (American):					
Hilonian.	do.	---	500-1,200	1.00	P2
Lurline.	Massie.	---	800-1,500	3.00	U2
Wilhelmina.	United.	---	900-1,500	2.00	NH
Chas. McCormick (American):					
Klamath.	do.	---	500-800	1.00	NI
Oceanic Steamship Co. (American):					
Mariposa.	do.	---	800-1,200	2.00	HK
Sierra.	do.		900-1,500	2.00	SM
Sudden and Christensen (American):		---			
Norwood.	do.	---	500-800	1.00	SG
Inter-Ocean Transportation Co. (American):					
Redondo.	do.	---	500-800	1.00	SU

ARRIVING AT FALL RIVER, MASS.

Name of line and vessel.	System.	Wave length.	Range.	Power.	Call letters.
New England Navigation Co. (American):		*Meters.*	*Nautical miles.*	*Kilowatts.*	
Commonwealth.	Massie.	300	60	0.25	CW
Priscilla.	do.	300	60	.25	CA
Puritan.	do.	300	60	.25	RN
Providence.	do.	300	60	.25	PV
Plymouth.	do.	300	60	.25	HY
Pilgrim.	do.	300	60	.25	GM
Maine.	do.	300	60	.25	MA
New Hampshire.	do.	300	60	.25	NS
City of Lowell.	do.	300	60	.25	WE
Chester W. Chapin.	do.	300	60	.25	HN
Boston.	do.	300	60	.25	BN
Pequonnock.	do.	300	60	.25	NK
City of Taunton.	do.	300	60	.25	Q
Old Colony.	do.	300	60	.25	MC
Bunker Hill.	do.	300	60	.25	MR
Massachusetts.	do.	300	60	.25	MS
Mohegan.	do.	300	60	.25	MO
Mohawk.	do.	300	60	.25	MK
New Haven.	do.	300	60	.25	MV

ARRIVING AT KEY WEST, FLA.

Name of line and vessel.	System.	Wave length.	Range.	Power.	Call letters.
Peninsular and Occidental Steamship Co. (American):		*Meters.*	*Nautical miles.*	*Kilowatts.*	
Miami.	United.	300	200	1.00	OZ

ARRIVING AT PORT TOWNSEND.

Name of line and vessel.	System.	Wave length.	Range.	Power.	Call letters.
Alaska Coast Co. (American):		*Meters.*	*Nautical miles.*	*Kilowatts.*	
Bertha.	United.	425	400	1.50	P9
Portland.	do.	425	400	1.50	P3
Alaska Pacific Steamship Co. (American):					
Buckman.	do.	425	400	1.50	P7
Watson.	do.	425	400	1.50	P8
Admiral Sampson.	do.	425	400	1.50	AS
Alaska Steamship Co. (American):					
Latouche.	do.	350	700	1.00	A1
Seward.	do.	300	400	1.00	AV
Northwestern.	do.	450	1,200	2.00	AN
Olympia.	do.	450	1,200	2.00	AW
Jefferson.	do.	300	300	1.00	HM
Victoria.	do.	450	1,500	2.00	AD
Dolphin.	do.	300	300	1.00	AU
Alameda.	do.	450	1,000	2.00	HD
Great Northern Steamship Co. (American):					
Minnesota.	do.	600	1,500	2.00	MI
Humboldt Steamship Co. (American):					
Humboldt.	do.	300	120	1.00	HX
Pacific Coast Steamship Co. (Amercan):					
City of Seattle.	do.	300	500	1.00	GA
Cottage City.	do.	300	300	1.00	GK
Canadian Pacific Railway Co. (British):					
Princess Victoria.	do.	400	100-1,000	2.00	CPV
Princess Royal.	do.	300	100-700	2.00	CPR
Princess May.	do.	300	100-800	2.00	CPM
Princess Charlotte.	do.	400	100-1,000	2.00	CPC
Nippon Yusen Kaisha (Japanese):					
Tamba Maru.	Japanese Government.	300	400-1,400	2.00	YTB
Awa Main.	do.	300	400-1,400	2.00	YAW
Kamakura Maru.	do.	300	400-1,400	2.00	YKM
Sado Maru.	do.	300	400-1,400	2.00	YSD
Inaha Maru.	do.	300	400-1,400	2.00	YIB

ARRIVING AT NEW ORLEANS.

Name of line and vessel.	System.	Wave length.	Range.	Power.	Call letters.
United Fruit Co. (British):		*Meters.*	*Nautical miles.*	*Kilowatts.*	
Abangarez.	United.	400	350	2.00	UF
Parismina.	Fessenden.	400	350	2.00	UD
Atenas.	do.	400	350	2.00	UFM
Heredia.	do.	400	350	2.00	UH
Turrialba.	United.	400	350	2.00	UK
Cartego.	do.	400	350	2.00	UC
Leyland Line (British):					
Colonian.	---	---	---	---	---
Californian.	---	---	---	---	---
Mercian.	---	---	---	---	---
Victorian.	---	---	---	---	---
Kingstonian.	---	---	---	---	---
Antillian.	---	---	---	---	---
Atlantian.	---	---	---	---	---
Median.	---	---	---	---	---
Etonian.	---	---	---	---	---
Vaccaro Bros. & Co. (Honduras):					
Rosina.	United.	400	350	2.00	TR
Joseph Vaccaro.	do.	400	350	2.00	TY
Navigazione Generale-Italiana (Italian):					
Liguria.	Marconi.	---	350	1.50	MAL
O. & A. Irgens (Norwegian):					
Ellis.	United.	400	350	2.00	UA
Preston.	do.	400	350	2.00	UB
Norway, Mexico and Gulf Steamship Co. (Norwegian):					
Texas.	do.	400	350	2.00	UXS
Noruega.	do.	400	350	2.00	URG

ARRIVING AT BOSTON.

Name of line and vessel.	System.	Wave length.	Range.	Power.	Call letters.
Merchants and Miners Transportation Co. (American):		*Meters.*	*Nautical miles.*	*Kilowatts.*	
Juniata.	United.	450	200	1.00	QN
Eastern Steamship Co. (American):					
Calvin Austin.	do.	400	250	1.00	RN
Governor Cobb.	do.	350	250	1.00	RB
Governor Dingley.	do.	500	250	1.00	RV
American Mail Steamship Co. (American):					
Admiral Farragut.	do.	400	250	2.00	UW
F. Leyland & Co. (British):					
Devonian.	Marconi.	330	150	.35	MDL
Winifredian.	do.	300	150	.35	MFL
Bohemian.	do.	300	150	.35	MEL
Canadian.	do.	300	150	.35	MGL
Cestrain.	do.	300	150	.35	MHL
Allan Line (British):					
Numidian.	do.	300-600	150	.35	MNN
Parisian.	do.	300-600	150	.35	MZN

ARRIVING AT PHILADELPHIA.

Name of line and vessel.	System.	Wave length.	Range.	Power.	Call letters.
American Mail Steamship Co. (American):		*Meters.*	*Nautical miles.*	*Kilowatts.*	
Admiral Schley.	United.	350	300	2.00	UG
Admiral Dewey.	do.	350	300	2.00	UV
Allan Line (British):					
Carthaginian.	do.	300	150	.35	MHN
Mongolian.	do.	300	150	.35	MON
Pretorian.	do.	300	150	.35	MFN
Ionian.	do.	300	150	.35	MIN
Sicilian.	do.	300	150	.35	MUN
Corinthian.	do.	300	150	.35	MKN

ARRIVING AT BALTIMORE.

Name of line and vessel.	System.	Wave length.	Range.	Power.	Call letters.
Merchants and Miners Transportation Co. (American):		*Meters.*	*Nautical miles.*	*Kilowatts.*	
Merrimack.	United.	450	200	1	QM

ARRIVING AT TAMPA, FLA.

Name of line and vessel.	System.	Wave length.	Range.	Power.	Call letters.
Peninsular and Occidental Steamship Co. (American):		*Meters.*	*Nautical miles.*	*Kilowatts.*	
Olivette.	De Forest.	---	100	1	OV
Mascotte.	do.	---	100	1	OW

ARRIVING AT COOS BAY, OREG.

Name of line and vessel.	System.	Wave length.	Range.	Power.	Call letters.
Interocean Transportation Co. (American):		*Meters.*	*Nautical miles.*	*Kilowatts.*	
Nann Smith.	United.	300	[a] 150	1	BO

[a] Day.

ARRIVING AT HONOLULU, HI.

(See San Francisco.)

6. SUMMARY OF VESSELS NOT EQUIPPED WITH WIRELESS.

Line.	Flag.	Vessels.
Merchants and Miners Transportation Co.	American.	20
Hamburg-American Line.	German.	15
Booth Line.	British.	12
Royal Dutch West India Mail.	Dutch.	12
Pacific Mail Steamship Co.	American.	10
North German Lloyd.	German.	8
Compagnie Generale Transatlantique.	French.	7
Osaka Shosen Kaisha.	Japanese.	6
Compania Trasatlantica.	Spanish.	6
Alaska Steamship Co.	American.	5
Atlantic Transport Line.	British.	5
Pinillos, Izaquierdo & Co.	Spanish.	5
China Mutual Steamship Co.	British.	4
Bank Line.	do.	4
Ocean Steamship Co.	do.	4
United Fruit Co.	do.	3
Dominion Atlantic Railway Co.	do.	3
Lamport & Holt.	do.	3
Southern Pacific Co.	American.	3
New York and Cuba Mail-Steamship Co.	do.	3
Uranium Steamship Co.	British.	3
Quebec Steamship Co.	do.	3
Anchor Line.	do.	3
Australian Mail Line.	do.	3
Thomas Pollard.	American.	2
C. P. Doe.	do.	2
Canada, Atlantic and Plant Steamship Co.	British.	2
Trinidad Line.	do.	2
Munson Steamship Line.	Cuban	2
Pacific Coast Co.	American	2
Red "D" Line.	do.	2
J. R. Hanify.	do.	2
Sobrinos de Herrera.	Cuban	1
Charles McCormick.	American	1
E. J. Dodge.	do.	1
California and Oregon Steamship Co.	do.	1
Northern Steamship Co.	do.	1
Prince Line (Limited).	British.	1
Porto Rico Line.	American.	1
Allan Line.	British.	1
Red Star Line.	Belgian.	1
W. A. Powell.	British.	1
Oregon Coal and Navigation Co.	American.	1
H. J. Knowles.	do.	1
Charles H. Higgins.	do.	1
J. Homer Fritch (Incorporated).	do.	1
Crescent City Transportation Co.	do.	1
Sudden & Christensen.	do.	1
National Steamship Co.	do.	1
Charente Steamship Co.	British.	1
Sociedad Anonima de Navegacion Transatlantica.	Uruguayan.	1
Total.		185

7. Vessels not Equipped with Wireless.

ARRIVING AT NEW YORK.

- Southern Pacific Co. (American):
  - Excelsior.
  - Chalmette.
- Red "D" Line (American):
  - Zulia.
  - Maracaibo.
- New York and Cuba Mail Steamship Co. (American):
  - City of Washington.
  - Seneca.
  - Brunswick.
- Porto Rico Line (American):
  - Arkadia.
- Booth Line (British):
  - Clement.
  - Cearense.
  - Christopher.
  - Francis.
  - Hubert.
  - Stephen.
  - Denis.
  - Pancras.
  - Crispin.
  - Cuthbert.
  - Boniface.
  - Justin.
- Uranium Steamship Co. (Limited) (British):
  - Volturno.
  - Campania.
  - Uranium.
- Quebec Steamship Co. (British):
  - Guiana.
  - Korona.
  - Parima.
- Prince Line (Limited) (British):
  - Eastern Prince.
- Anchor Line (British):
  - Italia.
  - Calabria.
  - Perugia.
- Atlantic Transport Line (British):
  - Mobile.
  - Mackinaw.
  - Montana.
  - Maryland.
  - Minnesota.
- Trinidad Line (British):
  - Grenada.
  - Maracas.
- Lamport & Holt (British):
  - Byron.
  - Tennyson.
  - Voltaire.
- Munson Steamship Line (Cuban):
  - Curityba.
  - Olinda.
- Royal Dutch West India Mail (Dutch):
  - Prins Frederik Hendrik.
  - Prins Maurits.
  - Prins dar Nederlanden.
  - Prins Willem I.
  - Prins Willem III.
  - Prins Willem IV.
  - Prins Willem V.
  - Suriname.
  - Saramacca.
  - Coppename.
  - Marowijne.
  - Ascania (chartered).
- Hamburg-American Line (German):
  - Sarnia.
  - Sibiria.
  - Altal.
  - Allemannia.
  - Albingia.
  - Alleghany.
  - Barcelona.
  - Istria.
  - Bosnia.
  - Bethania.
  - Albano.
  - Troja.
  - Calabria.
  - Dortmund.
- Companla Trasatlantica (Spanish):
  - Antonio Lopez.
  - Manuel Calvo.
  - Buenos Aires.
  - Montevideo.
  - Montserrat.

ARRIVING AT SAN FRANCISCO.

- Pacific Mail Steamship Co. (American):
  - Acapulco.
  - City of Panama.
  - City of Para.
  - City of Sydney.
  - Costa Rica.
  - Newport.
  - Pennsylvania.
  - Peru.
  - San Jose.
  - San Juan.
- Southern Pacific Co. (American):
  - Breakwater.
- Pacific Coast Co. (American):
  - City of Topeka.
  - Curacao.
- National Steamship Co. (American):
  - Brunswick.
- Thomas Pollard (American):
  - Centralia.
  - Coronado.
- Sudden & Christensen:
  - Chehalis.
- Crescent City Transportation Co. (American):
  - Del Norte.
- C. P. Doe (American):
  - Eureka.
  - F. A. Kilburn.
- J. Homer Fritch (Incorporated) (American):
  - Homer.
- Chas. H. Higgins (American):
  - James S. Higgins.
- H. J. Knowles (American):
  - J. B. Stetson.
- Oregon Coal and Navigation Co. (American):
  - M. F. Plant.
- California and Oregon Steamship Co. (American):
  - Nome City.
- E. J. Dodge (American):
  - Nothland.
- J. R. Hanify (American):
  - Santa Barbara.
  - Santa Monica.
- Chas. McCormick (American):
  - Yosemite.

ARRIVING AT BALTIMORE.

- Merchants and Miners Transportation Co. (American):
  - Aries.
  - Berkshire.
  - Dorchester.
  - Essex.
  - Frederick.
  - Gloucester.
  - Grecian.
  - Howard.
  - Itasca.
  - Indian.
  - Kershaw.
  - Lexington.
  - Nantucket.
  - New Orleans.
- Merchants and Miners Transportation Co. (American)--Continued.
  - Ontario.
  - Powhatan.
  - Persian.
  - Parthian.
  - Quantico.
- North German Lloyd (German):
  - Brandenburg.
  - Breslau.
  - Cassel.
  - Chemnitz.
  - Frankfurt.
  - Hannover.
  - Koln.
  - Wittekind.

ARRIVING AT PORT TOWNSEND.

- Alaska Steamship Co. (American):
    - Santa Ana.
    - Dora.
    - Dirigo.
    - Oakland.
    - Edith.
- Northern Steamship Co. (American):
    - A. G. Lindsay.
- Australian Mail Line (British):
    - Oceano.
    - Century.
    - Mineric.
- Bank Line (British):
    - Suveric.
    - Kumeric.
    - Aymeric.
    - Luceric.
- China Mutual Steamship Co. (British):
    - Oanfa.
    - Ning Chow.
    - Protesilaus.
    - Keemun.
- Ocean Steamship Co. (British):
    - Bellerophon.
    - Antilochus.
    - Teucer.
    - Titan.
- Osaka Shosen Kaisha (Japanese):
    - Tacoma Maru.
    - Seattle Maru.
    - Chicago Maru.
    - Panama Maru.
    - Mexico Maru.
    - Canada Maru.

ARRIVING AT SAN JUAN, P. R.

- Sobrinos de Herrera (Cuban):
    - Julia.
- Compagnie Generale Transatlantique (French):
    - Montreal.
    - Quebec.
    - St. Domingue.
    - Abd-el-Kader.
- Hamburg American Line (German):
    - Praesident.
- Compania Trasatmantica (Spanish):
    - Cataluna.
- Pinillos, Izquierdo & Co. (Spanish):
    - Catalina.
    - Conde Wifredo.
    - Pio IX.

ARRIVING AT NEW ORLEANS.

- W. A. Powell (British):
    - Orleanian.
- Charente Steamship Co. (British):
    - Mechanician.
- Pinillos, Izquierdo & Co. (Spanish):
    - Miguel M. Pinillos.
    - Martin Saenz.
- Compagnie Generale Transatlantique (French):
    - Virginie.
    - Californie.
    - Louisiane.
- Sociedad Anonima de Navegacion Transatlantica (Uruguayan):
    - Brasileno.

ARRIVING AT PHILADELPHIA.

- Merchants and Miners Transportation Co. (American):
    - Tuscan.
- Red Star Line (Belgian):
    - Friesland.
- Allan Line (British):
    - Siberian.

ARRIVING AT BOSTON.

United Fruit Co. (British): San Jose. Limon. Esparta. Dominion Atlantic Railway Co. (British): Prince George. Prince Arthur. Boston.	Canada, Atlantic and Plant Steamship Co. (British): Halifax. A. W. Perry.

- United States Early Radio History

Selected Extracts from the Annual Report of the Commissioner of Navigation to the Secretary of Commerce and Labor for the Fiscal Year Ended June 30, 1911.

Selected extracts about radio from the *Annual Report of the Commissioner of Navigation to the Secretary of Commerce and Labor for the Fiscal Year Ended June 30, 1911.* (Submitted November 18, 1911 from Commissioner Eugene Tyler Chamberlain to Secretary Charles Nagel).

Page 43:

WIRELESS-SHIP ACT.

During the last quarter of the fiscal year preparations were made for the enforcement of the wireless-ship act of June 24, 1910. The essential section of that act provides:

> From and after the first day of July, nineteen hundred and eleven, it shall be unlawful for any ocean-going steamer of the United States, or of any foreign country, carrying passengers and carrying fifty or more persons, including passengers and crew, to leave or attempt to leave any port of the United States unless such steamer shall be equipped with an efficient apparatus for radio-communication, in good working order, in charge of a person skilled in the use of such apparatus, which apparatus shall be capable of transmitting and receiving messages over a distance of at least one hundred miles, night or day: *Provided*, That the provisions of this Act shall not apply to steamers plying only between ports less than two hundred miles apart.

Three wireless-ship inspectors were selected from the classified service on the basis of practical experience in telegraphy, knowledge of electricity and wireless apparatus, and administrative ability. The three inspectors were then sent to the Bureau of Standards for a course of further technical training, and they began active work, respectively, at New York on July 3, at San Francisco on July 8, and at Baltimore on July 21.

During the three months ended September 30 they made 524 personal inspections of the wireless apparatus on steamships subject to the act, visiting for the purpose the following additional ports: Boston, Savannah, Charleston, S. C., Brunswick, Ga., Jacksonville, Key West, Tampa, Mobile, New Orleans, Galveston, Portland, Oreg., Tacoma, Seattle, and Port Townsend.

Pages 46-47:

VIOLATIONS OF THE ACT.

The wireless-ship act was approved on June 24, 1910, to take effect on July 1, 1911, so that a year was allowed for ocean passenger steamships and the wireless companies to arrange for compliance with its provisions. The act has been generally commended, and with very few exceptions all those affected by its provisions have willingly complied with its requirements and have cooperated with the Department in securing a satisfactory enforcement of the law. In case of violation the act does not authorize refusal of clearance but specifically provides for the imposition upon the master of a fine of no more than $5,000, in the discretion of the court. Collectors of customs were instructed, accordingly, to report to the proper United States attorney any case of violation of the law in their districts respectively. Three such cases have been so reported and are awaiting the action of the court. On July 3 the American Mail steamship *Zulia* cleared from Mayaguez, P. R., for New York, with a crew of 53 men and 31 passengers, without wireless apparatus or operator. The parts of the apparatus were on board but had not been assembled and put in working order, and there was no operator. The owners stated that they did not suppose Mayaguez was a port of the United States, and that they expected to put the apparatus in commission and secure a qualified operator on arrival in New York, as was done on July 12. The company gave a bond for $5,000, and the case will be tried before the United States district court for Porto Rico.

On July 21 the American steamship *Lexington* departed from Savannah for Philadelphia without a wireless operator. Savannah was a port of call and the operator left the ship for a trolley trip of a few hours, and did not return to the wharf until the ship had departed. His absence was not discovered until the *Lexington* was well down the river. The case is in the hands of the United States attorney. It has had its effect, as in another instance an American steamship returned to port for the wireless operator whose absence had not been observed by the master until the ship was 10 miles out at sea.

On July 21 the British steamship *Templemore* cleared from Baltimore for Liverpool with a crew nominally of 75 men. The *Templemore* is ordinarily a cargo steamer, not equipped with wireless. On this voyage four well-known residents of the city, not connected in any manner, so far as ascertained, with the ship or her cargo, were entered on the ship's articles as members of the crew at a shilling a month. The master was advised by customs officers that he would carry such men at his risk, and if the court held that they were in fact passengers, though nominally members of the crew, he would be liable to a heavy fine. The Federal grand jury indicted the master on October 13, and the case awaits trial.

Generally there has been no disposition to evade or violate the law. In several cases where the crew and passengers numbered 50 or more and the ship was not equipped, the excess over 49 were compelled to go ashore and take another vessel. Where apparatus has been found defective by the Department's inspectors, masters have detained their vessels until the defects have been remedied and the apparatus has been rendered efficient.

Pages 48-52:

INTERCHANGEABILITY.

The second section of the act provides:

> SEC. 2. That for the purpose of this Act apparatus for radio-communication shall not be deemed to be efficient unless the company installing it shall contract in writing to exchange, and shall in fact, exchange, as far as may be physically practicable, to be determined by the master of the vessel, messages with shore or ship stations using other systems of radio-communication.

This section was taken substantially from article 3 of the Berlin Radiotelegraphic Convention of 1906, reading:

> ART. 3. The coastal stations and the stations on shipboard shall be bound to exchange wireless telegrams without distinction of the wireless telegraph system adopted by such stations.

The purpose of the Berlin article was to forestall any attempt to establish an international monopoly in control of wireless telegraphy, and incidentally to increase the extent of the usefulness of each wireless installation. These purposes are also served by section 2 of the wireless-ship act.

Section 2 of the act enables the master of the ship to determine the extent to which exchange may be physically practicable. The need of such a limit was shown at the time of the loss of the steamship *Republic*, when unnecessary personal shore calls threatened interference with necessary distress signals from the ship and waste of the ship's limited and diminishing shortage power. Section 2 of the act has been complied with so far as the Bureau and its inspectors can ascertain. Complaint, if any, of its violation will receive prompt attention, but a willful violation is not probable, because it would involve rejection of the apparatus and subject the master to the penalty for failure to carry efficient apparatus. The United Wireless Co., which has equipped 438 vessels (including about 200 not subject to the act), and does a much larger business than any other company with vessels subject to the act began before July 1 and now continues to include in its contracts the following provision:

> The parties hereto agree to exchange messages with shore and ship stations using other systems of radio-communication in accordance with the provisions of an act of Congress entitled "An Act to require apparatus and operators for radio-communication on certain ocean steamers," approved June 24, 1910.

Following is an example of the agreement made by the Massie company, which has equipped 17 American vessels:

MARINE TRANSMISSION CO.,
(OPERATING THE MASSIE WIRELESS TELEGRAPH SYSTEM),
Providence, R. I., March 4, 1911.

SAN FRANCISCO & PORTLAND STEAMSHIP CO.,
San Francisco, Cal.

GENTLEMEN: We are pleased to advise that the wireless installed on your steamer *Rose City* complies with all the terms and conditions specified in section 2 of the act of June 24, 1910, relative to wireless equipment of passenger vessels, and we hereby agree to comply with the terms and conditions of the above-mentioned law in relation to exchanging of messages with other systems and wireless companies.

Very truly, yours,

WALTER W. MASSIE,
President and General Manager.

Foreign ships and wireless companies were already bound to exchange messages by the Berlin convention quoted. The Marconi company, however, has also entered into separate engagements with the various lines of steamships which it equips, of which the following is an example:

THE MARCONI INTERNATIONAL MARINE COMMUNICATION CO. (LTD.),
WATERGATE HOUSE, YORK BUILDINGS,
Adelphi, London, W. C., August 18, 1910.

THE CUNARD STEAMSHIP CO. (LTD.),
8 Water Street, Liverpool.

DEAR SIRS: In conformity with section (2) of the U. S. A. bill, S. 7021, approved by the President on June 24, 1910, being "An Act to require apparatus and operators for radio-communication on certain ocean steamers," we hereby undertake, as far as concern our installations on board your vessels, to comply with the provisions of the above mentioned section (2) as on and after July 1, 1911, when that act is to take effect.

This undertaking however is given without prejudice to our rights under the patent laws, and our communicating with installations which are an infringement of our patents must not be deemed an act of condonation on our part.

Yours faithfully,

THE MARCONI INTERNATIONAL MARINE COMMUNICATION CO. (LTD.),
W. W. BRADFIELD,
Deputy Manager.

The Marconi company has equipped 167 steamships subject to the act. The German Telefunken Co., which has equipped 57

ships subject to the act is bound by the Berlin convention, as is the Japanese Government, which itself installs the apparatus on Japanese trans-Pacific passenger steamships and furnishes the operators, who remain in Government service.

It is the custom of the wireless companies to lease the apparatus and to supply and pay the operator, and section 2 of the act was framed to meet this custom. The National Electric Signaling (Fessenden) Co., however, has sold outright the apparatus for several steamships of the United Fruit Co., and technically the law does not meet this situation. Such cases will necessarily be rare and offer no practical difficulty, as the United Fruit Co. has raised no objections to the Bureau's suggestion that it interchange messages with other systems and has made working arrangements for interchange with the companies named above and has instructed its operators to comply with them. The wireless-ship inspectors are in daily contact with wireless operators, and are thus in a position to report promptly any unwarranted failure or refusal to exchange messages.

WIRELESS-SHIP OPERATORS.

The act prescribed that the wireless installation on shipboard should be "in charge of a person skilled in the use of such apparatus," and bestowed upon the Secretary of Commerce and Labor power to make regulations to secure the execution of this and other provisions of the law. Correspondence with the wireless companies and with representatives of steamship companies subject to the act corroborated the Department's opinion that the simplest and most thorough method of securing the employment of skilled operators was to provide for Government examinations and the issue of Government certificates of skill in radiocommunication, similar to the licenses issued to the masters, mates, and pilots of steamboats. The Berlin Radiotelegraphic Convention of 1906, to which practically all nations except the United States have adhered, provides in the service regulations (VI, 3, 4) as follows:

> 3. The service of the station on shipboard shall be carried on by a telegraph operator holding a certificate issued by the government to which the vessel is subject. Such certificate shall attest the professional efficiency of the operator as regards:
> (*a*) Adjustment of the apparatus;
> (*b*) Transmission and acoustic reception at the rate of not less than 20 words a minute;
> (*c*) Knowledge of the regulations governing the exchange of wireless telegraph correspondence.
> 4. The certificate shall furthermore state that the government has bound the operator to secrecy with regard to the correspondence.

As more than half of the ocean passenger steamers subject to the act are under foreign flags, the Department, through the usual channels, notified foreign governments and on March 29 collectors of customs that wireless operators holding valid certificates issued by foreign governments which had ratified the Berlin convention would be recognized as persons skilled in the use of wireless apparatus, unless in specific cases there should be good reason to doubt the operator's skill and reliability. The foreign governments concerned readily adjusted themselves to this arrangement. Those nations which had not hitherto issued certificates to skilled operators arranged for their own government examinations--usually by their naval officers--and issued the necessary certificates. France, Italy, and Holland, with others, followed this course; Great Britain had already issued such certificates. So far as foreign ships are concerned, this regulation of the Department has worked satisfactorily.

The Berlin requirements were adopted substantially as the test of skill for American operators. The use of apparatus and the employment of operators under the Berlin convention is voluntary; the act of June 24, 1910, made both obligatory under heavy penalty in the case of certain ocean passenger steamers. At the outset, accordingly, it seemed best to require a speed of 15 words American Morse or 12 words Continental Morse in receiving and transmitting messages. By July, 1912, the speed requirement will be increased to the Berlin standard. Of course many certificated American operators already have such speed. The Continental or International Morse Code is used generally by foreign operators and is prescribed by the Berlin convention. It is also prescribed by the wireless regulations of the United States Navy. Experts are disposed to regard messages thus transmitted as less liable to error than by the American Morse Code, which is preferred by American operators generally because it permits of more rapid transmission. The Department's regulations, accordingly, permit the examination of operators in either code. In another year it is expected that American ship operators generally will have become proficient in the Continental Morse so as to take or receive messages in that code at the rate of 20 words a minute, five letters to the word.

The wireless operator's practical knowledge can be tested only at a set of apparatus, and the Department of Commerce and Labor lacked the machinery for such examinations. The Navy Department was consulted in April and consented to cooperate with this Department. Practical examinations of wireless-ship operators began in June and have been held from time to time since at the navy-yards which are equipped with wireless apparatus and operators. These examinations by naval officers have covered the lines of knowledge already indicated, and have involved the actual use of apparatus of various systems, correction of faults, change from one wave length to another, and have tested the operator's ability to meet difficulties. The examinations will continue throughout the current year, and to the cooperation of the Navy Department is due in great measure the successful operation of the act of June 24, 1910. The Department's certificates of skill in radiocommunication have been issued to wireless-ship operators who have passed examinations at navy yards and naval stations, up to September 30, as follows:

Boston	46	Washington	13
Philadelphia	42	Puget Sound	39
New York	159	San Francisco	117
Norfolk	14	Honolulu	10
Charleston	3	Key West	3
San Juan	8		
New Orleans	23	Total	477

This Department's wireless-ship inspectors have examined and issued certificates to 30 operators, so in all 507 wireless-ship operators have passed practical Government examinations and received certificates of skill. Their names and addresses are filed with the Bureau. The certificates are valid for two years from the date of issue, subject to suspension or revocation by the Secretary of Commerce and Labor for cause. The form in use also provides for a certificate on the reverse as to the operator's services by the master of the steamship. Before a certificate is issued, the operator takes oath that he will faithfully preserve the secrecy of all messages coming to his knowledge through his employment under the certificate, and that he will well and faithfully discharge his duties. The wireless companies usually require their ship operators to give a bond that they will perform their duties faithfully, that they will report on board at times prescribed, and will not desert the ship. The wireless-ship operator both here and abroad is now reckoned one of the crew of the vessel, and it is the practice for him to sign the ship's articles with the officers and crew, thus fixing his legal status as a seaman, with the privileges and responsibilities which are attached. He is entitled to free marine-hospital relief, on the one hand, and on the other is subject to the discipline of the ship.

The work and pay compare favorably with the work and pay of railroad telegraph operators. In this part of the country railroad operators average from $50 to $60 a month, but begin service at about $40 a month. The wireless-ship operator in the United States usually begins with $30 a month, paid by the company, but in addition he receives his board and room from the ship; he is also frequently allowed by the company a percentage of the tolls on the commercial messages he receives and forwards.

The first three months' operation of the law have dispelled the fear that there might be a dearth of wireless-ship operators. Fully 600 operators have applied for Government examinations, and to prevent undue trespass on the courtesy of the Navy Department applications for examination thus far have been allowed only from wireless operators actually employed or from those seeking employment from a wireless or steamship company and presenting letters from such company. The field of examination ought soon to be enlarged. To enable those who live remote from the seaboard to secure certificates, the War Department has consented to cooperate by holding examinations at Fort Omaha, which is equipped with wireless apparatus in charge of officers of the Signal Corps.

WATCHES OF OPERATORS.

The usefulness of wireless apparatus on shipboard as a means of protecting life aboard and life aboard other ships depends, in the last analysis, on the vigilance of the wireless operator. If the operator be not at his post, distress calls from another ship will not be heard, and the benefit of radiocommunication will be lost. The best types of trans-Atlantic passenger steamships already carry two or more wireless operators, so that one operator is always on watch. It can not be expected, however that the small passenger steamers subject to the wireless-ship act will carry more than one certificated operator. Early in the inspection provided by Congress it was noted that on some ships the operator was berthed at a distance from his apparatus and in some instances on a lower deck. The disadvantages of the arrangement are so plain that in most instances as soon as the Bureau's wireless-ship inspectors put the situation before the owners and masters of such steamships they shifted quarters so that the operator's berth should be within reach of his apparatus. No legal authority to compel such a change has been assumed, but the suggestion, when offered, has been rejected in only a few cases, and those usually of steamships which in other respects are inferior and just keep within other statutory requirements. The three wireless-ship inspectors have already done useful work, outside their statutory duties, in observing good features in the wireless arrangements of one ship and bringing such arrangements to the notice of masters of other ships. They are now consulting with shipowners as to the best means of meeting a situation, which undoubtedly exists in the passenger ships along the coast, that between the hours of midnight and 6 o'clock in the morning almost all the operators are asleep. Out of several methods of correction proposed a reasonable one will probably soon be selected or evolved.

Page 53-55:

REGULATION OF RADIOCOMMUNICATION.

The Congress of the United States has been the first parliamentary body to recognize by statute the value of radiocommunication as a means of protecting life and property at sea.

The Austrian Reichsrath has passed a similar law applicable to Austrian ocean passenger steamships which navigate beyond the limits of the Mediterranean Sea. (Appendix M). In the British House of Commons a bill was introduced, adopting substantially the language of our act, and supported by some of the most eminent names identified with maritime affairs in Parliament. It required, however, wireless equipment on cargo boats as well as ocean passenger steamships and failed to secure

the necessary support of Government. While we have been first in prescribing the use of wireless apparatus on shipboard, we are behind all other nations in the necessary regulation of radiocommunication. The scope of radiocommunication and the rapidity of the development of the art may be gathered from the facts that in the first wireless experiments of Marconi in 1895, messages were transmitted only 2 miles, while the new naval wireless station at Arlington will send noontime, Washington meridian, when the time ball falls at the Navy Department, to all ships equipped with wireless within a radius of 1,500 miles on the Atlantic, and the station can send messages 3,000 miles. The need for regulation arises primarily from the fact that wireless messages interfere with one another, so that important dispatches on public business may be obstructed by the mischievous efforts of a tyro. Land-telegraph lines can not be set in operation anywhere without some official sanction for the erection of poles and stringing of wires, although one wire does not interfere with another. A fine of $1,000 or imprisonment for not more than three years is provided by section 60 of the Penal Code of 1909 for interference with messages over Government wires.

The ether is common property, and with the cheapest apparatus unrestrained trivial messages can create Babel. Again, bogus wireless messages may be sent by the reckless, and some have gone to the criminal length of "faking" the distress call of a passenger ship at sea.

The need for the regulation of wireless telegraphy, in order to secure the greatest benefit from it and prevent the establishment of a monopoly, led the Imperial German Government in 1903 to invite other nations to join with it in adequate international regulation. Such regulation, to be effectual, must be international, as wireless apparatus does not need to acquire any territorial right of way, and defies the boundary lines of nations. After preliminary correspondence and deliberation an international agreement was signed at Berlin by representatives of all the principal nations. That agreement, known as the Berlin International Radiotelegraphic Convention of November 3, 1906, has been ratified by 33 nations, including the greatest maritime powers, except the United States. Although the delegates of the United States were influential in shaping the agreement, it has not thus far been ratified by the Senate, mainly because it is difficult to adjust two of its requirements to our situation. The land-telegraph lines of Europe, Japan, and nations generally are owned by government and are usually operated as part of the national post-office system. In the United States, of course, the great telegraph systems are owned by corporations. The Berlin convention in article 10 and in several of the regulations fixes the rates for wireless dispatches and provides for their transmission over land lines to their terminus and from their point of origin. These propositions are familiar to the continental mind, but are innovations in the system of the United States, although not insuperable objections to the treaty. The third article of the Berlin convention provides:

> The coastal stations and the stations on shipboard shall be bound to exchange wireless telegrams without distinction of the wireless-telegraph system adopted by such stations.

This provision for interchange to prevent a world-wide monopoly, which was apprehended at one time, has been incorporated in essentials in section 2 of the wireless-ship act of June 24, 1910, mentioned at page 48 of the report.

The remaining important articles of the convention are:

> ART. 8. The working of the wireless-telegraph stations shall be organized as far as possible in such manner as not to disturb the service of other wireless stations.
>
> ART. 9. Wireless-telegraph stations are bound to give absolute priority to calls of distress from ships, to similarly answer such calls and to take such action with regard thereto as may be required.

The essential features of the service regulations, which are a part of the convention, are:

> I. The choice of wireless apparatus and devices to be used by the coastal stations and stations on shipboard shall be unrestricted. The installation of such stations shall as far as possible keep pace with scientific and technical progress.
>
> II. Two wave lengths, one of 300 meters and the other of 600 meters, are authorized for general public service. Every coastal station opened to such service shall use one or the other of these two wave lengths. During the whole time that a station is open to service it shall be in condition to receive calls according to its wave length, and no other wave length shall be used by it for the service of general public correspondence. Each government may however, authorize in coastal stations the employment of other wave lengths designed to insure long-range service or any service other than for general public correspondence established in conformity with the provisions of the convention, provide such wave lengths do not exceed 600 meters or that they do exceed 1,600 meters.
>
> III, 1. The normal wave length for stations on shipboard shall be 300 meters. Every station on shipboard shall be installed in such manner as to be able to use this wave length. Other wave lengths may be employed by such stations provided they do not exceed 600 meters.
>
> 2. Vessels of small tonnage which are unable to have plants on board insuring a wave length of 300 meters may be authorized to use a shorter wave length.
>
> V. The exchange of superfluous signals and words is prohibited to stations of the class referred to in article 1 of the convention. Experiments and practice will be permitted in such stations in so far as they do not interfere with the service of other stations.
>
> VI, 1. No station on shipboard shall be established or worked by private enterprise without authority from the government to which the vessel is subject. Such authority shall be in the nature of a license issued by said government.
>
> 3. The service of the station on shipboard shall be carried on by a telegraph operator holding a certificate issued by the government to which the vessel is subject.

To try to carry out so far as possible in the United States the important purposes of the Berlin convention, the Department of Commerce and Labor, in conjunction with the Treasury Department, the War Department, and the Navy Department, prepared a bill to regulate radiocommunication. This bill was the result of several months of conference between the departments concerned and the representatives of wireless companies, and was introduced in the Senate on March 17, 1910. It was discussed at length before the Senate Committee on Commerce and passed the Senate unanimously on June 16, 1910. A similar bill was reported unanimously to the House of Representatives on April 1, 1910, but held for the Senate bill which did not reach the House in time for action before final adjournment on June 25, 1910. The bills were accompanied by full reports from committees (S. Rep. No.

659, 61st Cong., 2d sess., to accompany S. 7243, and H. Rept. No. 924, to accompany H. R. 23595), which set forth fully the provisions and purpose of the bill. The bill provides, in brief, for Federal licenses for the operation of wireless apparatus at ship or shore stations and for Federal licenses for wireless operators. The President is authorized to establish regulations to prevent interference with messages relating to vessels in distress or of naval or military stations, and severe penalties are imposed for uttering false or fraudulent distress calls and messages. Distress messages and naval and military messages have priority. The general administration of the bill is intrusted to the Secretary of Commerce and Labor, and the measure itself is carefully drawn within the commerce clause of the Constitution. It is very much hoped that the bill may be passed at the coming session of Congress, as six months' notice should be given before enforcement. It is a necessary supplement to the wireless-ship act, and will bring the United States abreast of other nations. Such legislation would be necessary if we adhere to the Berlin Radiotelegraphic Convention. It is hoped that the Senate may yet find a way to ratify that convention, but if the objections arising from our land-telegraph system can not be overcome or passed by, then the passage of the bill referred to will secure to the United States the essential benefits which the international convention has brought to other nations. The International Radiotelegraphic Conference will assemble at London on June 4, 1912, and although the United States is not a party to the convention we should be represented at the conference. Radiocommunication, now only 17 years old, is plainly destined to play a part of growing importance in commerce and navigation, and if this country should unavoidably ever become involved in war it will be invaluable in national defense.

Pages 56-57:

GOVERNMENT OWNERSHIP.

In peaceful times, like the present, the commercial system of the United States in respect of wireless telegraphy presents a striking example of economic waste. We have a Government seacoast system, maintained by Congress, so complete that it is within bounds to say that any ship equipped with wireless apparatus under the wireless-ship act of 1910 can be in communication with a naval shore station at all times on voyages along the coast between ports 200 miles or more distant. This Government system is duplicated at some points and to a greater or less degree of efficiency by commercial stations owned and operated by four or five corporations. It is no trade secret that thus far these corporations have not declared large dividends. Possibly in some instances the returns have been invested in experiments or improvements; possibly plants have been erected ample to supply a future rather than the present demand, and there may have been even instances where stock has been issued on no more tangible an asset than the ether itself. Waiving the matter of national defense, the dual system of Government and private shore stations means wastefulness to the people of the United States. This waste, from the nature of things, must increase as competing companies extend their plants and duplicate among themselves apparatus, stations, and operators, or one company will in time absorb the others and establish a monopoly. The situation has been brought home to this Bureau in the enforcement of the wireless-ship act. One company, which has equipped many trans-Atlantic steamships, has no Pacific coast stations in the United States. Several other companies have various vessels equipped, but only limited shore facilities. So far as possible, Congress has regulated the situation by providing for compulsory interchange between systems, but there can not be cordial cooperation when one company must devote its shore plant, representing considerable investment, to aid a competitor without any shore equipment, in competing with it for business on shipboard. The naval coast stations, in the last analysis, are the immediate guaranty that the law can and will be effective.

In the light of experience it is probable that, if we had now to meet at the beginning the question of land-telegraph lines, the United States would have assumed the ownership and operation of them as other nations have done. Our telegraph systems now represent an immense investment and, even if acquisition were deemed desirable, which is not here for a moment intimated, the cost to the Treasury would be very large. Commercially the wireless systems in the United States are infants. One, for example, with a nominal capital of hundreds of thousands represents an actual investment of $30,000. The principal companies at the present time are engaged in expensive litigation over patent rights. That the companies are thus involved is not a reason for taking advantage of weakness and dissension. It is, however, a contributory disclosure of the fact that the actual investments thus far made are small and not yet of assured value. If it should be deemed desirable for the Government of the United States to acquire the same ownership and control of wireless stations within its limits which other nations have acquired virtually from the outset, that result can be brought about, with adequate consideration for all bona fide investments of individuals, at much less cost and with much less disturbance to the established order of things now than in the course of a few years. There are, of course, some obvious objections to the suggestion, and it may be urged that the course of invention would be hampered by Government ownership. The suggestion, not recommendation, of Government ownership has been made with diffidence, because it has been forced by experience upon the Bureau, at the outset opposed on conviction to the principle involved. The matter is too large and involves too many questions to be the basis of recommendation by an ordinary bureau.

- United States Early Radio History

Selected Extracts from the Annual Report of the Commissioner of Navigation to the Secretary of Commerce and Labor for the Fiscal Year Ended June 30, 1912.

Selected extracts about radio from the ***Annual Report of the Commissioner of Navigation to the Secretary of Commerce and Labor for the Fiscal Year Ended June 30, 1912.*** **(Submitted November 13, 1912 from Commissioner Eugene Tyler Chamberlain to Secretary Charles Nagel.)**

Pages 40-41:

REGULATION OF RADIO COMMUNICATION.

The act to regulate radio communication was approved on August 13 and will take effect on December 13. In brief it prescribes that all apparatus and operators for radio communication within the jurisdiction of the United States (except Government stations and operators and those in the Philippines) shall be licensed by the Secretary of Commerce and Labor. Such licenses are prescribed by the international convention so far as international communication is concerned, and the act thus carries out the obligation of the United States. The same principle is applied to all land stations and operators within constitutional jurisdiction. The tendency abroad for some years was to restrict the use of the invention to military and naval purposes, but as its commercial feasibility and value have been demonstrated, its larger use within reasonable limitations has been provided for, and the act of August 13, in the main, is based on the power to regulate interstate and foreign commerce, with the power to provide for the common defense invoked in certain portions of the measure.

The act differs in one essential respect from general legislation of recent years in that it does not delegate wide powers of regulation to an executive department, but in the body of the statute itself states with particularity the regulations which are to govern administrative officers and private interests alike. The act has not yet taken effect, but in the preparations for its enforcement the specific requirements of the act have, in the main, helped rather than hindered preliminary work, and have proved preferable to a wider latitude of administrative authority.

The time allowed to carry out the act was somewhat short in view of its application to the entire United States and to ship and land stations, which will number several thousands. The act was passed August 13 and the appropriation to give it effect on August 26. Civil-service examinations for positions of radio inspector, for which the test papers had been prepared in advance of the appropriation, were held on September 25 throughout the country, and the first inspectors were appointed on probation on October 16. The examinations furnished a body of young men especially qualified by practical experience and by scientific attainments. To make sure that practical men had been secured, the successful applicants were assigned for brief terms of duty at the port of New York, where nearly all varieties of radio apparatus may be examined, and at the Bureau of Standards, to familiarize them with the latest scientific developments in radio communication. The administration of the law is thus in the hands of a competent and intelligent field force. The inspectors were at their posts by November 18.

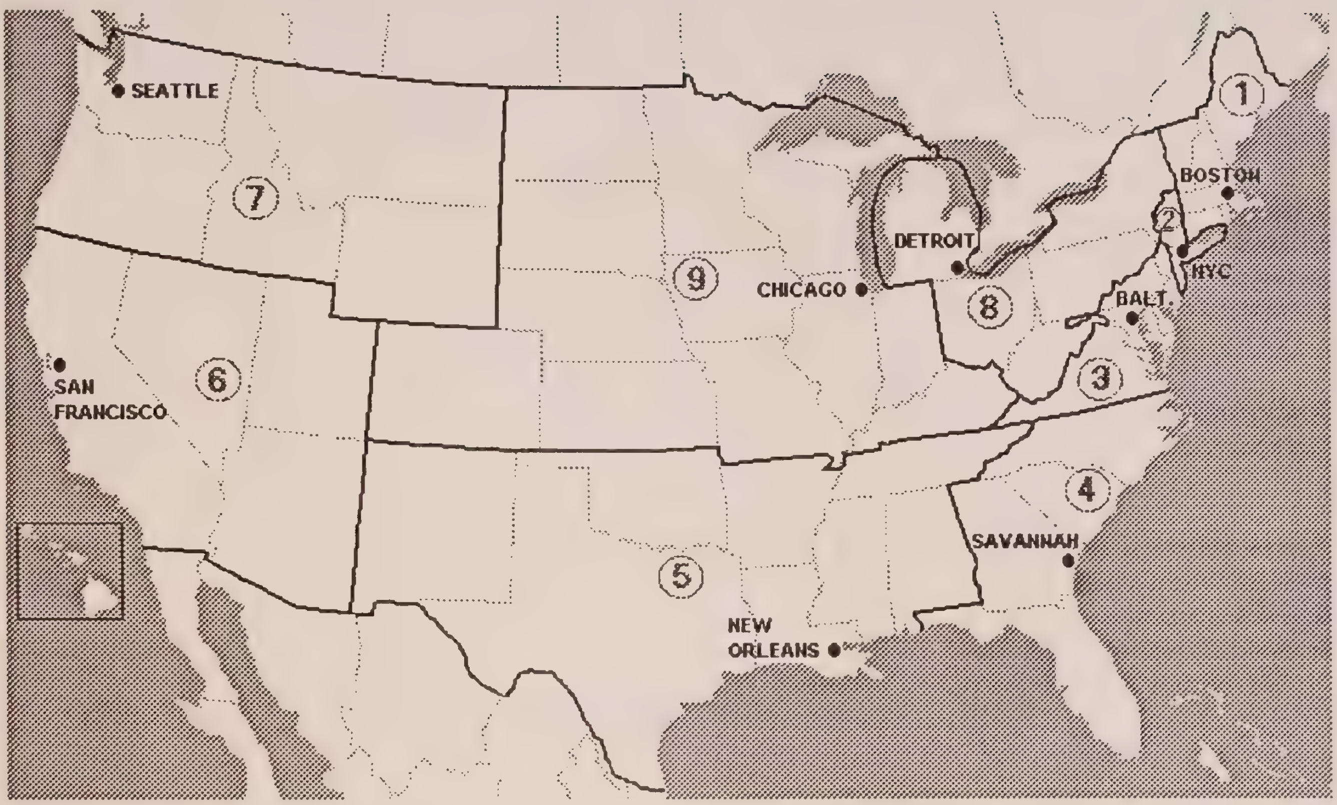
The preparation of the necessary forms and blanks has advanced rapidly and special instruments for the use of inspectors have been devised by the Bureau of Standards and will be available as soon as the manufacturers can turn them out, which will not be until January. In the meantime that Bureau, with the cooperation of scientific institutions which are interested in the success of the law, is assisting inspectors with the loan of instruments and with temporary devices to assist in the performance of their preliminary work. Although endeavors in all lines to carry out the act have been maintained constantly at high pressure since the adjournment of Congress, it is probable that preparations will not be completed in all parts of the country by December 13, and especially in States bordering on the Great Lakes, where navigation will soon close. Through interior States the act can not be carried out before 1913. The companies operating radio apparatus for commercial purposes in many instances must make changes in antiquated apparatus to bring it into conformity with law, and it is quite probable that these changes will not be completed in all instances by December 13.

The act to regulate radio communication is closely interwoven with the wireless-ship act of 1910, and the administrative machinery to carry out the two laws and the Berlin convention have been consolidated. The entire United States has been divided for the purpose into nine districts...

- United States Early Radio History

Radio Inspection Districts.

Radio Inspection Districts



In late 1912, the Department of Commerce and Labor's Bureau of Navigation divided the United States into nine "Radio Inspection Districts", in order to enforce provisions of the August 13, 1912 "Act to Regulate Radio Communication". Although there were a few minor adjustments, the overall district boundaries remained the same over the years. Above is a map of the nine U.S. Radio Inspection Districts, adopted from a map which appeared on page 55 of the July, 1922 issue of *Radio News*. (The layout of the districts reflected the early emphasis on radio's use by seagoing vessels.)

The August 15, 1919 edition of *Radio Communication Laws of the United States*, included the following sections about the Radio Inspection Districts:

163. The Department has established, for the purpose of enforcing, through radio inspectors and others, the acts relating to radio communication and the International Convention, the following districts, with the principal office for each district at the customhouse of the port named.

166.

1. BOSTON, MASS.: Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut.
2. NEW YORK, N. Y.: New York (county of New York, Staten Island, Long Island, and counties on the Hudson River to and including Schenectady, Albany, and Rensselaer) and New Jersey (counties of Bergen, Passaic, Essex, Union, Middlesex, Monmouth, Hudson, and Ocean).
3. BALTIMORE, MD.: New Jersey (all counties not included in second district), Pennsylvania (counties of Philadelphia, Delaware, all counties south of the Blue Mountains, and Franklin County), Delaware, Maryland, Virginia, District of Columbia.
4. SAVANNAH, GA.: North Carolina, South Carolina, Georgia, Florida, Porto Rico.
5. NEW ORLEANS, LA.: Alabama, Mississippi, Louisiana, Texas, Tennessee, Arkansas, Oklahoma, New Mexico.
6. SAN FRANCISCO, CALIF.: California, Hawaii, Nevada, Utah, Arizona.
7. SEATTLE, WASH.: Oregon, Washington, Alaska, Idaho, Montana, Wyoming.
8. DETROIT, MICH.: New York (all counties not included in second district), Pennsylvania (all counties not included in third district), West Virginia, Ohio, Michigan (Lower Peninsula).
9. CHICAGO, ILL.: Indiana, Illinois, Wisconsin, Michigan (Upper Peninsula), Minnesota, Kentucky, Missouri, Kansas, Colorado, Iowa, Nebraska, South Dakota, North Dakota.

(Until mid-1919 the 8th radio district had been headquartered in Cleveland, Ohio).

An Act to Regulate Radio Communication, Aug. 13, 1912.

Text of the August 13, 1912 "An Act to regulate radio communication". This was the first act in the United States to require radio stations to be licenced--the earlier ship acts only required that certain ships to have radio equipment installed. [The layout for this page is based on the July 27, 1914 edition of *Radio Laws and Regulations of the United States*, published by the Washington Government Printing Office].

[PUBLIC--NO. 264.]

[S. 6412.]

An Act To regulate radio communication, approved August 13, 1912.

Radio act.
License.
Penalty.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That a person, company, or corporation within the jurisdiction of the United States shall not use or operate any apparatus for radio communication as a means of commercial intercourse among the several States, or with foreign nations, or upon any vessel of the United States engaged in interstate or foreign commerce, or for the transmission of radiograms or signals the effect of which extends beyond the jurisdiction of the State or Territory in which the same are made, or where interference would be caused thereby with the receipt of messages or signals from beyond the jurisdiction of the said State or Territory, except under and in accordance with a license, revocable for cause, in that behalf granted by the Secretary of Commerce and Labor upon application therefor; but nothing in this Act shall be construed to apply to the transmission and exchange of radiograms or signals between points situated in the same State: *Provided,* That the effect thereof shall not extend beyond the jurisdiction of the said State or interfere with the reception of radiograms or signals from beyond said jurisdiction; and a license shall not be required for the transmission or exchange of radiograms or signals by or on behalf of the Government of the United States, but every Government station on land or sea shall have special call letters designated and published in the list of radio stations of the United States by the Department of Commerce and Labor. Any person, company, or corporation that shall use or operate any apparatus for radio communication in violation of this section, or knowingly aid or abet another person, company, or corporation in so doing, shall be deemed guilty of a misdemeanor, and on conviction thereof shall be punished by a fine not exceeding five hundred dollars, and the apparatus or device so unlawfully used and operated may be adjudged forfeited to the United States.

License form.

SEC. 2. That every such license shall be in such form as the Secretary of Commerce and Labor shall determine and shall contain the restrictions, pursuant to this Act, on and subject to which the license is granted; that every such license shall be issued only to citizens of the United States or Porto Rico or to a company incorporated under the laws of some State or Territory or of the United States or Porto Rico, and shall specify the ownership and location of the station in which said apparatus shall be used and other particulars for its identification and to enable its range to be estimated; shall state the purpose of the station, and in case of a station in actual operation at the date of passage of this Act, shall contain the statement that satisfactory proof has been furnished that it was actually operating on the above-mentioned date; shall state the wave length or the wave lengths authorized for use by the station for the prevention of interference and the hours for which the station is licensed for work; and shall not be construed to authorize the use of any apparatus for radio communication in any other station than that specified. Every such license shall be subject to the regulations contained herein, and such regulations as may be established from time to time by authority of this Act or subsequent Acts and treaties of the United States. Every such license shall provide that the President of the United States in time of war or public peril or disaster may cause the closing of any station for radio communication and the removal therefrom of all radio apparatus, or may authorize the use or control of any such station or apparatus by any department of the Government, upon just compensation to the owners.

Operators.
Suspension of license.
Penalty.
Temporary permit.

SEC. 3. That every such apparatus shall at all times while in use and operation as aforesaid be in charge or under the supervision of a person or persons licensed for that purpose by the Secretary of Commerce and Labor. Every person so licensed who in the operation of any radio apparatus shall fail to observe and obey regulations contained in or made pursuant to this Act or subsequent Acts or treaties of the United States, or any one of them, or who shall fail to enforce obedience thereto by an unlicensed person while serving under his supervision, in addition to the punishments and penalties herein prescribed, may suffer the suspension of the said license for a period to be fixed by the Secretary of Commerce and Labor not exceeding one year. It shall be unlawful to employ any unlicensed person or for any unlicensed person to serve in charge or in supervision of the use and operation of such apparatus, and any person violating this provision shall be guilty of a misdemeanor, and on conviction thereof shall be punished by a fine of not more than one hundred dollars or imprisonment for not more than two months; or both, in the discretion of the court, for each and every such offense: *Provided,* That in case of emergency the Secretary of Commerce and Labor may authorize a collector of customs to issue a temporary permit, in lieu of a license, to the operator on a vessel subject to the radio ship Act of June twenty-fourth, nineteen hundred and ten.

Regulations.

SEC. 4. That for the purpose of preventing or minimizing interference with communication between stations in which such apparatus is operated, to facilitate radio communication, and to further the prompt receipt of distress signals, said private and commercial stations shall be subject to the regulations of this section. These regulations shall be enforced by the Secretary of Commerce and Labor through the collectors of customs and other officers of the Government as other regulations herein provided for.

The Secretary of Commerce and Labor may, in his discretion, waive the provisions of any or all of these regulations when no interference of the character above mentioned can ensue.

Experimental stations.

The Secretary of Commerce and Labor may grant special temporary licenses to stations actually engaged in conducting experiments for the development of the science of radio communication, or the apparatus pertaining thereto, to carry on special tests, using any amount of power or any wave lengths, at such hours and under such conditions as will insure the least interference with the sending or receipt of commercial or Government radiograms, of distress signals and radiograms, or with the work of other stations.

In these regulations the naval and military stations shall be understood to be stations on land.

REGULATIONS.

NORMAL WAVE LENGTH.

First. Every station shall be required to designate a certain definite wave length as the normal sending and receiving wave length of the station. This wave length shall not exceed six hundred meters or it shall exceed one thousand six hundred meters. Every coastal station open to general public service shall at all times be ready to receive messages of such wave lengths as are required by the Berlin convention. Every ship station, except as hereinafter provided, and every coast station open to general public service shall be prepared to use two sending wave lengths, one of three hundred meters and one of six hundred meters, as required by the international convention in force: *Provided,* That the Secretary of Commerce and Labor may, in his discretion, change the limit of wave length reservation made by regulations first and second to accord with any international agreement to which the United States is a party.

OTHER WAVE LENGTHS.

Second. In addition to the normal sending wave length all stations, except as provided hereinafter in these regulations, may use other sending wave lengths: *Provided,* That they do not exceed six hundred meters or that they do exceed one thousand six hundred meters: *Provided further,* That the character of the waves emitted conforms to the requirements of regulations third and fourth following.

USE OF A "PURE WAVE."

Third. At all stations if the sending apparatus, to be referred to hereinafter as the "transmitter," is of such a character that the energy is radiated in two or more wave lengths, more or less sharply defined, as indicated by a sensitive wave meter, the energy in no one of the lesser waves shall exceed ten per centum of that in the greatest.

USE OF A "SHARP WAVE."

Fourth. At all stations the logarithmic decrement per complete oscillation in the wave trains emitted by the transmitter shall not exceed two-tenths, except when sending distress signals or signals and messages relating thereto.

USE OF "STANDARD DISTRESS WAVE."

Fifth. Every station on shipboard shall be prepared to send distress calls on the normal wave length designated by the international convention in force, except on vessels of small tonnage unable to have plants insuring that wave length.

SIGNAL OF DISTRESS.

Sixth. The distress call used shall be the international signal of distress ● ● ● ▬ ▬ ▬ ● ● ●

USE OF "BROAD INTERFERING WAVE" FOR DISTRESS SIGNALS.

Seventh. When sending distress signals, the transmitter of a station on shipboard may be tuned in such a manner as to create a maximum of interference with a maximum of radiation.

DISTANCE REQUIREMENT FOR DISTRESS SIGNALS.

Eighth. Every station on shipboard, wherever practicable, shall be prepared to send distress signals of the character specified in regulations fifth and sixth with sufficient power to enable them to be received by day over sea a distance of one hundred nautical miles by a shipboard station equipped with apparatus for both sending and receiving equal in all essential particulars to that of the station first mentioned.

"RIGHT OF WAY" FOR DISTRESS SIGNALS.

Ninth. All stations are required to give absolute priority to signals and radiograms relating to ships in distress; to cease all sending on hearing a distress signal; and, except when engaged in answering or aiding the ship in distress, to refrain from sending until all signals and radiograms relating thereto are completed.

REDUCED POWER FOR SHIPS NEAR A GOVERNMENT STATION.

Tenth. No station on shipboard, when within fifteen nautical miles of a naval or military station, shall use a transformer input exceeding one kilowatt, nor, when within five nautical miles of such a station, a transformer input exceeding one-half kilowatt, except for sending signals of distress, or signals or radiograms relating thereto.

INTERCOMMUNICATION.

Eleventh. Each shore station open to general public service between the coast and vessels at sea shall be bound to exchange radiograms with any similar shore station and with any ship station without distinction of the radio system adopted by such stations, respectively, and each station on shipboard shall be bound to exchange radiograms with any other station on shipboard without distinction of the radio systems adopted by each station, respectively.

It shall be the duty of each such shore station, during the hours it is in operation, to listen in at intervals of not less than fifteen minutes and for a period not less than two minutes, with the receiver tuned to receive messages of three hundred meter wave lengths.

DIVISION OF TIME.

Twelfth. At important seaports and at all other places where naval or military and private or commercial shore stations operate in such close proximity that interference with the work of naval and military stations can not be avoided by the enforcement of the regulations contained in the foregoing regulations concerning wave lengths and character of signals emitted, such private or commercial shore stations as do interfere with the reception of signals by the naval and military stations concerned shall not use their transmitters during the first fifteen minutes of each hour, local standard time. The Secretary of Commerce and Labor may, on the recommendation of the department concerned, designate the station or stations which may be required to observe this division of time.

GOVERNMENT STATIONS TO OBSERVE DIVISION OF TIME.

Thirteenth. The naval or military stations for which the above-mentioned division of time may be established shall transmit signals or radiograms only during the first fifteen minutes of each hour, local standard time, except in case of signals or radiograms relating to vessels in distress, as hereinbefore provided.

USE OF UNNECESSARY POWER.

Fourteenth. In all circumstances, except in case of signals or radiograms relating to vessels in distress, all stations shall use the minimum amount of energy necessary to carry out any communication desired.

GENERAL RESTRICTIONS ON PRIVATE STATIONS.

Fifteenth. No private or commercial station not engaged in the transaction of bona fide commercial business by radio communication or in experimentation in connection with the development and manufacture of radio apparatus for commercial purposes shall use a transmitting wave length exceeding two hundred meters, or a transformer input exceeding one kilowatt, except by special authority of the Secretary of Commerce and Labor contained in the license of that station: *Provided*, That the owner or operator of a station of the character mentioned in this regulation shall not be liable for a violation of the requirements of the third or fourth regulations to the penalties of one hundred dollars or twenty-five dollars, respectively, provided in this section unless the person maintaining or operating such station shall have been notified in

writing that the said transmitter has been found, upon tests conducted by the Government, to be so adjusted as to violate the said third and fourth regulations, and opportunity has been given to said owner or operator to adjust said transmitter in conformity with said regulations.

SPECIAL RESTRICTIONS IN THE VICINITIES OF GOVERNMENT STATIONS.

Sixteenth. No station of the character mentioned in regulation fifteenth situated within five nautical miles of a naval or military station shall use a transmitting wave length exceeding two hundred meters or a transformer input exceeding one-half kilowatt.

SHIP STATIONS TO COMMUNICATE WITH NEAREST SHORE STATIONS.

Seventeenth. In general, the shipboard stations shall transmit their radiograms to the nearest shore station. A sender on board a vessel shall, however, have the right to designate the shore station through which he desires to have his radiograms transmitted. If this can not be done, the wishes of the sender are to be complied with only if the transmission can be effected without interfering with the service of other stations.

LIMITATIONS FOR FUTURE INSTALLATIONS IN VICINITIES OF GOVERNMENT STATIONS.

Eighteenth. No station on shore not in actual operation at the date of the passage of this Act shall be licensed for the transaction of commercial business by radio communication within fifteen nautical miles of the following naval or military stations, to wit: Arlington, Virginia; Key West, Florida; San Juan, Porto Rico; North Head and Tatoosh Island, Washington; San Diego, California; and those established or which may be established in Alaska and in the Canal Zone; and the head of the department having control of such Government stations shall, so far as is consistent with the transaction of governmental business, arrange for the transmission and receipt of commercial radiograms under the provisions of the Berlin convention of nineteen hundred and six and future international conventions or treaties to which the United States may be a party, at each of the stations above referred to, and shall fix the rates therefor, subject to control of such rates by Congress. At such stations and wherever and whenever shore stations open for general public business between the coast and vessels at sea under the provisions of the Berlin convention of nineteen hundred and six and future international conventions and treaties to which the United States may be a party shall not be so established as to insure a constant service day and night without interruption, and in all localities wherever or whenever such service shall not be maintained by a commercial shore station within one hundred nautical miles of a naval radio station, the Secretary of the Navy shall, so far as is consistent with the transaction of Government business, open naval radio stations to the general public business described above, and shall fix rates for such service, subject to control of such rates by Congress. The receipts from such radiograms shall be covered into the Treasury as miscellaneous receipts.

SECRECY OF MESSAGES.

Nineteenth. No person or persons engaged in or having knowledge of the operation of any station or stations, shall divulge or publish the contents of any messages transmitted or received by such station, except to the person or persons to whom the same may be directed, or their authorized agent, or to another station employed to forward such message to its destination, unless legally required so to do by the court of competent jurisdiction or other competent authority. Any person guilty of divulging or publishing any message, except as herein provided, shall, on conviction thereof, be punishable by a fine of not more than two hundred and fifty dollars or imprisonment for a period of not exceeding three months, or both fine and imprisonment, in the discretion of the court.

PENALTIES.

For violation of any of these regulations, subject to which a license under sections one and two of this Act may be issued, the owner of the apparatus shall be liable to a penalty of one hundred dollars, which may be reduced or remitted by the Secretary of Commerce and Labor, and for repeated violations of any of such regulations, the license may be revoked.

For violation of any of these regulations, except as provided in regulation nineteenth, subject to which a license under section three of this Act may be issued, the operator shall be subject to a penalty of twenty-five dollars, which may be reduced or remitted by the Secretary of Commerce and Labor, and for repeated violations of any such regulations, the license shall be suspended or revoked.

Interference.

SEC. 5. That every license granted under the provisions of this Act for the operation or use or apparatus for radio communication shall prescribe that the operator thereof shall not willfully or maliciously interfere with any other radio communication. Such interference shall be deemed a misdemeanor, and upon conviction thereof the owner or operator, or both, shall be punishable by a fine of not to exceed five hundred dollars or

imprisonment for not to exceed one year, or both.

SEC. 6. That the expression "radio communication" as used in this Act means any system of electrical communication by telegraphy or telephony without the aid of any wire connecting the points from and at which the radiograms, signals, or other communications are sent or received.

False signals.

SEC. 7. That a person, company, or corporation within the jurisdiction of the United States shall not knowingly utter or transmit, or cause to be uttered or transmitted, any false or fraudulent distress signal or call or false or fraudulent signal, call, or other radiogram of any kind. The penalty for so uttering or transmitting a false or fraudulent distress signal or call shall be a fine of not more than two thousand five hundred dollars or imprisonment for not more than five years, or both, in the discretion of the court, for each and every such offense, and the penalty for so uttering or transmitting, or causing to be uttered or transmitted, any other false or fraudulent signal, call, or other radiogram shall be a fine of not more than one thousand dollars or imprisonment for not more than two years, or both, in the discretion of the court, for each and every such offense.

Foreign vessels.

SEC. 8. That a person, company, or corporation shall not use or operate any apparatus for radio communication on a foreign ship in territorial waters of the United States otherwise than in accordance with the provisions of sections four and seven of this Act and so much of section five as imposes a penalty for interference. Save as aforesaid, nothing in this Act shall apply to apparatus for radio communication on any foreign ship.

SEC. 9. That the trial of any offense under this Act shall be in the district in which it is committed, or if the offense is committed upon the high seas or out of the jurisdiction of any particular State or district the trial shall be in the district where the offender may be found or into which he shall be first brought.

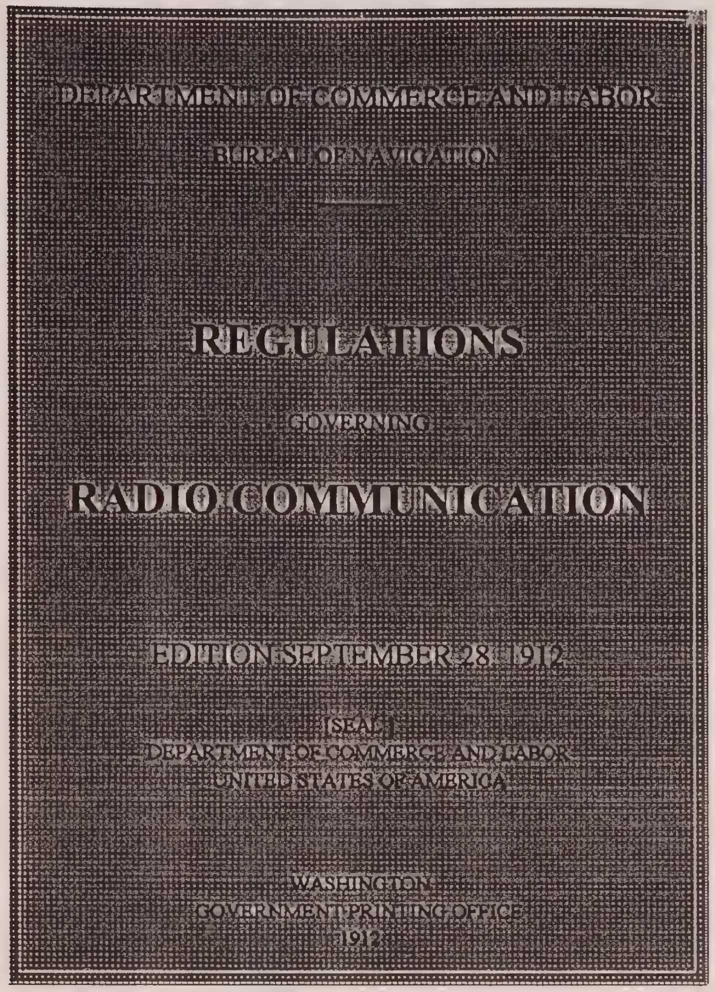
SEC. 10. That this Act shall not apply to the Philippine Islands.

SEC. 11. That this Act shall take effect and be in force on and after four months from its passage.

Approved, August 13, 1912.

- United States Early Radio History

Regulations Governing Radio Communication, Sept. 28, 1912.



DEPARTMENT OF COMMERCE AND LABOR

BUREAU OF NAVIGATION

REGULATIONS

GOVERNING

RADIO COMMUNICATION

EDITION SEPTEMBER 28, 1912

[SEAL]
DEPARTMENT OF COMMERCE AND LABOR
UNITED STATES OF AMERICA

WASHINGTON
GOVERNMENT PRINTING OFFICE
1912

This is an HTML version of the original government document, *Regulations Governing Radio Communication* [C11.2:R11], which reported the United States radio regulations current at the time of publication.

This HTML version is based on a photocopy of the original 13-page publication. It incorporates all of the original contents (except for some minor elements, such as page number references), keeping as much as possible the layout of the original document.

REGULATIONS GOVERNING RADIO COMMUNICATION.

Department of Commerce and Labor,
Office of the Secretary,
Washington, September 28, 1912.

To owners and operators of apparatus for radio communication (wireless telegraphy):

The attention of all owners and operators of apparatus for radio communication is invited to the act of August 13, 1912, to regulate radio communication and to the following regulations to carry out that act and the International Radiotelegraphic Convention, proclaimed by the President of the United States on May 25, 1912. Owners and operators may obtain copies of the act and of the International Convention from the Commissioner of Navigation, Department of Commerce and Labor, Washington, D. C., or from the radio inspectors for the districts named below.

The act to regulate radio communication will take effect on December 13, 1912. It requires the owners and operators of apparatus for radio communication under certain conditions to be licensed on and after that date.

The regulations established by the act or by authority of the act and of the International Convention will be enforced by the Secretary of Commerce and Labor through collectors of customs and other officers of the Government.

Violations of the act and regulations will be reported to the collector of customs or surveyor of the district in which the offense occurs, who will report the case to the Secretary of Commerce and Labor (Bureau of Navigation) according to the procedure followed in violations of the navigation laws.

ADMINISTRATIVE DISTRICTS.

The Department has established, for the purpose of enforcing through radio inspectors the acts relating to radio communication and the International Convention, the following districts with the principal office for each district at the customhouse of the port named. (These districts supersede those announced in Department Circular No. 241, of September 5, 1912.)

1. Boston, Mass---Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut.

2. New York, N. Y---New York (county of New York, Staten Island, Long Island, and counties on the Hudson River to and including Albany, and Rensselaer) and New Jersey (counties of Bergen, Passaic, Essex, Union, Middlesex, Monmouth).
3. Baltimore, Md---New Jersey (all counties not included in second district), Pennsylvania (counties of Philadelphia, Delaware, all counties south of the Blue Mountains, and Franklin County), Delaware, Maryland, Virginia, District of Columbia.
4. Savannah, Ga---North Carolina, South Carolina, Georgia, Florida, Porto Rico.
5. New Orleans, La---Alabama, Mississippi, Louisiana, Texas, Tennessee, Arkansas, Oklahoma, New Mexico.
6. San Francisco, Calif--- California, Hawaii, Nevada, Utah, Arizona.
7. Seattle, Wash---Oregon, Washington, Alaska, Idaho, Montana, Wyoming.
8. Cleveland, Ohio---New York (all counties not included in second district), Pennsylvania (all counties not included in third district), West Virginia, Ohio, Michigan (Lower Peninsula).
9. Chicago, Ill---Indiana, Illinois, Wisconsin, Michigan (Upper Peninsula), Minnesota, Kentucky, Missouri, Kansas, Colorado, Iowa, Nebraska, South Dakota, North Dakota.

A radio inspector is authorized in exceptional cases to act outside of his district for the convenience of commerce. In such cases he should communicate before or after acting with the inspector in whose district he has acted. Radio inspectors are authorized to communicate directly with collectors of customs and to cooperate with them in the enforcement of the law.

EXAMINATION OF OPERATORS FOR LICENSES.

The examination of operators for licenses prescribed in the following regulations will be held at the United States navy yards at Boston, Mass., Brooklyn, N. Y., Philadelphia, Pa., Washington, D. C., Norfolk, Va., Charleston, S. C., New Orleans, La., Mare Island (San Francisco), Cal., Puget Sound, Wash.; at the naval stations at Key West, Fla., San Juan, P. R., and Honolulu, Hawaii; at the Naval Academy, Annapolis, Md.; also at Fort Sam Houston, San Antonio, Tex., Fort Wood, New York Harbor, Fort Omaha, Nebr., Fort Leavenworth, Kans.; at the Army stations at St. Michael, Alaska, and Fairbanks, Alaska; also at the Bureau of Standards, Washington, D. C.; and by the Department's radio inspectors at the customhouses in their districts and elsewhere by arrangement with them. Applicants for licenses should communicate in writing [Form 756] with the commandants or commanding officers of the navy yards or Army posts or Naval or Army stations named, or with the Director of the Bureau of Standards, or with the radio inspectors at the customhouses, to ascertain the day and hour when they can be examined. Additional opportunities for examination can be ascertained by communicating with the Department's radio inspectors at the customhouses or with the Commissioner of Navigation, Department of Commerce and Labor, Washington, D. C. The licenses to operators will be delivered at the places of examination.

The license provides that the holder shall take the oath for the preservation of the secrecy of messages before a notary public or officer authorized to administer oaths.

REGULATIONS.

Part 1. LICENSES--APPARATUS.

A. Apparatus Exempt from License.

The act does not apply either afloat or ashore to--

(*a*) Apparatus for radio communication which merely receives radiograms and is not equipped for sending.

(*b*) Apparatus for the transmission of radiograms exclusively between points in the same State, if the effect of such transmission does not extend beyond the State (so as to interfere with the radio communication of other States) or if the effect of such transmission does not interfere with the reception of radiograms from beyond the State (so as to interfere with the interstate radio communication of that State). The owner or operator of any apparatus who may be in doubt whether his apparatus, under this paragraph, is exempt from license may write the facts to the Commissioner of Navigation, Department of Commerce and Labor, Washington, D. C., before applying for a license.

B. Ship Stations.

The apparatus for transmission of radiograms or signals on any vessel of the United States must be licensed if--

(*a*) The vessel is engaged in interstate or foreign commerce; or

(*b*) The apparatus transmits radiograms or signals the effect of which at any time extends beyond the State; or

(*c*) The apparatus interferes with the receipt of messages in any State from beyond such State.

For the purposes of the administration of the act, ship stations on vessels of the United States shall be of these classes:

Class A.--(*a*) Ocean passenger steamers which from October 1, 1912, and (*b*) Great Lakes passenger steamers which from April 1, 1913, are subject to the act of July 23, 1912, and are required to carry two operators and maintain a constant skilled watch.

Class B.--Cargo steamers which (on the Great Lakes from April 1, 1913, and on the ocean from July 1, 1913), with crews of

50 or more, are required to carry two operators, the second of whom may be a member of the crew certified as competent to receive distress calls, etc., maintaining a transmitting service during limited hours but a constant receiving watch.

Class C.--Vessels voluntarily equipped with radio apparatus and not subject to the act of July 23, 1912, after October 1, 1912; April 1, 1913; or July 1, 1913, with no fixed hours of service, such as--

1. Passenger steamers, where the licensed capacity and number of crew combined are less than 50.
2. Cargo steamers with crews of less than 50.
3. Tugs and towing steamers, etc., with crews of less than 50.
4. Motor vessels.
5. Sailing vessels and barges.
6. Yachts.

C. LAND STATIONS.

Apparatus for radio communication on land within the jurisdiction of the United States (excluding the Philippine Islands and excluding apparatus of the Government of the United States) must be licensed if--

(*a*) The apparatus is a means of commercial intercourse among the several States or with foreign nations; or

(*b*) The apparatus transmits radiograms or signals the effect of which at any time extends beyond the State; or

(*c*) The apparatus interferes with the receipt of messages in any State from beyond such State.

For the purposes of the administration of the act, stations on land are divided into two general descriptions, according to geographical location:

I. COAST OR SHORE STATIONS are stations which transmit messages to vessels at sea or on the Great Lakes or whose operations may affect the transmission of messages between ship and ship, or ship and coast. The principal purpose of the regulation of radio communication, international and national, is to secure the greatest efficiency of maritime communication through this agency, especially as a means of promoting safety to life.

II. INLAND STATIONS are stations which do not transmit messages to vessels at sea or on the Great Lakes and whose operations can not affect the transmission of messages between ship and ship, or ship and coast. This may be due to their geographical location or to their range, dependent on power and aerial, or conditions. In some instances actual inspection may be necessary to determine whether a station should be licensed as a coast station or an inland station. An owner or operator in doubt may write the facts to the Commissioner of Navigation, Department of Commerce and Labor, Washington, D. C., when applying for a license.

As the time to prepare for the enforcement of the law and the means available are somewhat limited, the Department will give the first attention to coast stations, which are more important for the purposes of the act. As soon as practicable after the more important stations have been licensed, applications in behalf of inland stations will receive attention, and, when necessary, special arrangements for licensing will be undertaken.

CLASSES OF LAND STATIONS.

Both coast stations (the words "coast stations," "shore stations," and "coastal stations" are used interchangeably) and inland stations are divided for the purposes of the administration of the act into the following classes:

1. General public service stations.
2. Limited commercial stations.
3. Experiment stations for the development of radio communication.
4. Technical and training school stations.
5. General amateur stations.
6. Special amateur stations.
7. Restricted amateur stations.
8. Special class--High-powered stations for exceptional distances.

DESCRIPTION OF CLASSES.

1. *General public service stations* are those open to general business between coast and ships or between land stations and include those operated by common carriers under the act of February 4, 1887, to regulate commerce, amended June 18, 1910. They are required to maintain a constant receiving service. ["Every coastal station open to general public service shall at all times be ready to receive messages of such wave lengths as are required by the Berlin Convention." (Sec. 4, First Regulation.)]

Wherever such stations do not insure a constant service, transmitting and receiving day and night without interruption, the Secretary of the Navy is directed to open naval radio stations to public business (sec. 4, Eighteenth Regulation). The Secretary of War is authorized by the act of May 26, 1900 (31 Stat., 206), to open Alaskan military stations to public service.

2. *Limited commercial stations* are not open to general public service and are licensed for a specific commercial service or services defined in the license.

3. *Experiment stations.*--The Secretary of Commerce and Labor is authorized by section 4 of the act to grant special temporary licenses "to stations actually engaged in conducting experiments for the development of the science of radio communication, or the apparatus pertaining thereto, to carry on special tests, using any amount of power or any wave lengths, at such hours and

under such conditions as will insure the least interference with the sending or receipt of commercial or Government radiograms, of distress signals and radiograms, or with the work of other stations." Applicants for such licenses should state any technical result they have already produced, their technical attainments, etc.

4. *Technical and training school stations* will be licensed in a separate class, according to the degree of technical training attained and imparted and to local conditions.

5. *General amateur stations* are restricted to a transmitting wave length not exceeding 200 meters and a transformer input not exceeding 1 kilowatt. (Sec. 4, Fifteenth Regulation.)

6. *Special amateur stations* may be licensed by the Secretary of Commerce and Labor to use a longer wave length and a higher power on special application to the Secretary of Commerce and Labor. Applications for this class from amateurs with less than two years experience in actual radio communication will not be approved. The application must state the experience and purpose of the applicant, the local conditions of radio communication, especially of maritime radio communication in the vicinity of the station, and a special license will be granted only if some substantial benefit to the art or to commerce apart from individual amusement seems probable. (Sec. 4, Fifteenth Regulation.)

7. *Restricted amateur stations*, within 5 nautical miles of a naval or military station, are restricted to a wave length not exceeding 200 meters and to a transformer input not exceeding one-half kilowatt. (Sec. 4, Sixteenth Regulation.)

8. *Special class--High-powered stations for exceptional distances* are land stations designed (coast) to carry on transoceanic radio communication as between the United States and European countries, or between the Pacific coast and Hawaii, or from the United States over similar long distances at sea to another land station, or (inland) to carry on radio communication overland over exceptional distances. Special licenses will be issued for such stations, and applications therefor will be addressed to the Commissioner of Navigation.

Part 2. LICENSES--OPERATORS.

The third section of the act prescribes that every radio apparatus required to be licensed shall at all times while in use and operation be in charge or under the supervision of a person or persons licensed for that purpose by the Secretary of Commerce and Labor.

Licenses approved and issued by the Secretary of Commerce and Labor to operators will be forwarded late in October to officers described under the head "Examination of operators for licenses" and will be delivered to successful applicants by examining officers.

[NOTE.--*Apprentices.*--Under the supervision of a licensed operator an apprentice or unlicensed person may learn the art by the actual use of the apparatus, but the licensed operator who fails to enforce obedience to the regulations by the apprentice or unlicensed person serving under his supervision is liable to penalties as if he had himself violated the regulations.]

Operators' licenses are divided into the following grades:

I. Commercial:
  1. First grade.
  2. Second grade.
  3. Cargo grade.
  4. Extra grade.
  5. Temporary permit.

II. Amateur:
  6. First grade.
  7. Second grade.

III. Technical:
  8. Experiment grade.
  9. Instruction grade.

The requirements which applicants must meet to secure licenses of the several grades and the scope and limitations of employment authorized by the licenses of the several grades are as follows:

I. COMMERCIAL.

First grade.--The applicant must pass a satisfactory examination in--

(*a*) The adjustment, operation, and care of the apparatus, including correction of faults and change from one wave length to another.

(*b*) Transmitting and receiving by ear at a speed of not less than 20 words a minute in Continental Morse (five letters to the word).

(*c*) Use and care of storage battery or other auxiliary.

(*d*) Knowledge of the international regulations applying to radio communication--at present the Berlin Radiotelegraphic Convention of 1906.

(*e*) Knowledge of requirements of the acts of Congress to regulate radio communication--at present secs. 3, 4, 5, 6, and 7 of the act of August 13, 1912.

(1) The commercial first-grade license qualifies the operator for employment at any ship or land station of any class.

(2) Every ship station of Class A must carry at least one operator having a valid commercial first-grade license, or, in the case of a foreign ship, having an equivalent foreign license.

[NOTE.--The requirements for this grade are the same as the international requirements imposed on operators of foreign ships by international regulation, except the knowledge of the use and care of storage battery or other auxiliary and of the act of August 13, 1912. Inspectors will allow a reasonable time to foreign operators on foreign ships to meet the additional requirements supplying them as promptly as practicable with copies of the act of August 13, 1912.]

(3) Every ship station of Class A on a steamer carrying 100 or more passengers must carry at least two operators having commercial first-grade licenses or equivalent foreign licenses.

(4) Every coast station of classes 1, 2, 3, 4, and 8 must have at least one operator licensed as commercial first grade, and every coast station of classes 1 and 8 must have at least two operators licensed as commercial first grade.

(5) Every inland station of classes 1, 2, and 3 must have at least one operator licensed as commercial first grade.

Second grade.--The applicant must pass a satisfactory examination in all the subjects prescribed above for the first grade, with the exception that the minimum speed in transmitting and receiving shall be not less than 12 words a minute in Continental Morse.

(1) An operator licensed as commercial second grade, on subsequent compliance with the speed test for the first grade, may have his license raised to the first grade by the indorsement in red ink on the face of his license "Examined on [date] at [place] and passed first grade by [examining officer's signature]," or a first-grade license may be issued.

(2) Every ship station under Class A (except steamers carrying 100 or more passengers) must carry a second operator, having the commercial second-grade license, or higher, or an equivalent foreign license.

(3) Every ship station under Classes B and C must carry at least one operator licensed as commercial second grade, or higher, or an equivalent foreign license where such are issued. Class B covers cargo steamers and does not apply to the Great Lakes before April 1, 1913, or to the seaboard before July 1, 1913, so ample time remains for the issue of licenses abroad to second-grade operators on foreign ships.

Cargo grade.--Section 2 of the act of July 23, 1912, provides:

> On cargo steamers, in lieu of the second operator provided for in this act, there may be substituted a member of the crew or other person who shall be duly certified and entered in the ship's log as competent to receive and understand distress calls or other usual calls indicating danger, and to aid in maintaining a constant wireless watch so far as required for the safety of life.

Examining officers and radio inspectors are authorized to issue a certificate to the facts above enumerated in the case of a member of the crew or other person, and experience under this form will be credited by examining officers if the holder later applies for examination for a license.

Extra grade.--The Department desires to establish, if practicable, a corps of specially trained and trustworthy radio operators who may be available for Government service. For this purpose a special license will be issued to operators holding the commercial first-grade license, whose certificates of skill in radio communication, issued under the act of June 24, 1910, and licenses under this act record 12 months' satisfactory ocean service as shown by masters' indorsement. A special examination in the radio regulations of the United States Navy will also be required. The commercial extra-grade license will not be issued before the spring of 1913, and will be the subject of a special circular.

Temporary permit.--Section 3 of the act of August 13, 1912, provides:

> In case of emergency the Secretary of Commerce and Labor may authorize a collector of customs to issue a temporary permit, in lieu of a license, to the operator on a vessel subject to the radio ship act of June twenty-fourth, nineteen hundred and ten.

The temporary permit is to be issued only in cases of emergency and will be valid for only one voyage. If practicable, the radio inspector should ascertain the applicant's qualifications before the collector issues a temporary permit. The collector will report in each case to the Commissioner of Navigation the circumstances which rendered necessary the issue of a temporary permit. Before December 1, 1912, special instructions to collectors concerning temporary permits will be issued.

CERTIFICATES OF SKILL IN RADIO COMMUNICATION.

Certificates, heretofore issued under the act of June 24, 1910, will not be valid substitutes for the licenses required by the act of August 13, 1912, on and after December 13, 1912. The holders of these certificates should present themselves to the examining officers and radio inspectors for examination and license under the new act. Examining officers are requested to give precedence, as far as practicable, to the holders of these certificates and to exercise their discretion in giving credence to the former examination on which the certificate was issued, and especially to give due credit to satisfactory service records indorsed thereon. Operators should retain these certificates, as they will prove useful in applications for licenses of the various classes and grades under the radio-communication act and in establishing claims to the benefits accruing to those in the service of the merchant marine of the United States.

II. AMATEUR.

General.--Amateurs, before applying for licenses, should read and understand the essential parts of the Berlin Radiotelegraphic Convention and sections 3, 4, 5, and 7 of the act of August 13, 1912. The Department recognizes that radio communication offers a wholesome form of instructive recreation for amateurs. At the same time its use for this purpose must observe strictly the rights of others to the uninterrupted use of apparatus for important public and commercial purposes. The Department will not knowingly issue a license to an amateur who does not recognize and will not obey this principle. To this end the intelligent reading of the

International Convention and the act of Congress is prescribed as the first step to be taken by amateurs. Copies of the two publications may be secured for this purpose from the Department's radio inspectors or from the Commissioner of Navigation, but they are not for public distribution.

First grade.--The applicant must have a sufficient knowledge of the adjustment and operation of the apparatus, and of the regulations of the International Convention and acts of Congress in so far as they relate to interference with other radio communication and impose certain duties on all grades of operators. The applicant must be able to transmit and receive in Continental Morse, but no speed rate will be prescribed. Applicants for licenses of this grade residing at or near any place where examinations are held will communicate with examining officers and will be examined and receive licenses of amateur grades. At places in seaboard States, remote from examining officers, applicants will file applications with the radio inspector, who will endeavor to arrange for examinations on his inspection trips.

Second grade.--The requirements for the second grade will be the same as for the first grade. The second-grade license will be issued where an applicant can not be examined or until he can be examined. An examining officer or radio inspector is authorized in his discretion to waive an actual examination of an applicant for an amateur license, if the amateur for adequate reasons can not present himself for examination but in writing can satisfy the examining officer or radio inspector that he is qualified to hold a license and will conform to its obligations.

III. TECHNICAL.

Experiment and instruction grades.--The operator's license for either of these grades is a commercial first-grade license, indorsed by the Secretary of Commerce and Labor with a statement of the special purposes for which it is valid. It should be forwarded to the Commissioner of Navigation with a recommendation, if practicable, from an examining officer or radio inspector.

Part 3. APPLICATIONS FOR LICENSES.

Licenses for the use and operation of apparatus for radio communication under the act may be issued only to citizens of the United States or Porto Rico or to a company incorporated under the laws of some State or Territory or of the United States or Porto Rico. Licenses are required before December 13, 1912.

I. SHIP STATIONS.

Applications for licenses for ship stations should be addressed to the Department's radio inspector at the customhouse of the port whence the vessel usually departs. The application by the company operating the apparatus should state the name of the ship in respect of which the license is required. The radio inspector will then issue the Department's blank form of application for license to be filled in by the applicant and returned to the radio inspector with a statement when the ship will be in port and its radio apparatus may be thoroughly inspected.

Applications may be made at once at New York, Baltimore, New Orleans, and San Francisco for licenses for ships ordinarily departing from ports in those districts. Inspectors will be stationed as soon as practicable at Boston, Mass., Savannah, Ga., and Seattle, Wash. As the season of navigation on the Great Lakes presumably will close before December 13, measures will not be taken to license ship stations on Lake vessels before the spring, unless in case of emergency.

Applicants for licenses for ship stations at ports where inspectors are not available may address the Commissioner of Navigation, Department of Commerce and Labor, Washington, D. C., who will forward the application blanks and arrange for inspection.

II. LAND STATIONS.

Coast stations.--The several classes of coast stations will be considered for reasons already assigned in advance of inland stations, and applicants for licenses for stations in States not on the seaboard are especially requested not to make applications before November 1.

Applications for licenses for coast stations should be addressed to the Department's radio inspector, if there be one near the station; if not, to the Commissioner of Navigation, Department of Commerce and Labor, Washington, D. C.

Form 757 (application for license for land station) will be furnished by radio inspectors.

The application will state the class of the station for which a license is desired, with particulars to show its proper classification, approximate transmitting range with a similar station, and precise location (State, county, city or town, street and number, or, if outside of city or town limits, as exact a description of its locality as may be). A blank form for apparatus will be sent when Form 757 has been filed, and arrangements made for inspection if necessary. Requests for licenses for coast stations will be taken up in the order of classes, as indicated above, and in the order of date received only so far as the relative importance of stations will permit. Amateur applicants who state that they have read the Berlin Radiotelegraphic Convention and the act of August 13, 1912, will receive attention before those who have not.

Inland stations.--The issue of licenses to inland stations, as already defined, probably can not be undertaken before late in November. The procedure for application for licenses will be the same as for coast stations.

III. FORMS.

(*a*) The several forms of applications and licenses for apparatus and operators, according to classes and grades, will be printed and issued to examining officers (through the War and Navy Departments) and to radio inspectors at an early day. The licenses will be numbered serially. Each series will be accompanied by instructions indicating when copies or abstracts are requested or directed to be made for the use of the Commissioner of Navigation.

(*b*) To prepare, print, distribute, and fill out the licenses for apparatus throughout the country will require some time, and applicants are advised in advance that a month may elapse between the application for a license and its issue. Applications for operators' licenses in the vicinity of examining officers will probably be acted upon, as a rule, in less time.

IV. COMMERCIAL OPERATORS.

Applications for operators' licenses of the several commercial grades should be addressed to examining officers or radio inspectors, who will arrange for examinations as under the wireless ship act of 1910. Where the applicant is not within reasonable distance of an examining officer or radio inspector, he may forward his application with a statement of facts to the Commissioner of Navigation. The Commissioner of Navigation will endeavor to arrange for a test of the applicant's qualifications, but as the Department's resources are limited, such a test can not be promised in all instances, especially before the inspection system has been more fully established in the spring.

V. AMATEUR OPERATORS.

(*a*) Amateurs in the seaboard States should write to the examining officer in their vicinity for Form 756 (application for operator's license) and to the radio inspector in their vicinity, for Form 757 (application for license for land station). If the application for operator's license is also made to the radio inspector, both applications should be forwarded in the same envelope.

(*b*) Amateurs in the inland States will follow the same course, but they are requested to be patient, as licenses probably can not be issued to them as operators or to their apparatus before November or December. Where application has been made for a license and the Department has not been able to act, through lack of time, steps toward imposing penalties of course will not be taken.

Amateurs in doubt as to where or how to apply for licenses may address the Commissioner of Navigation.

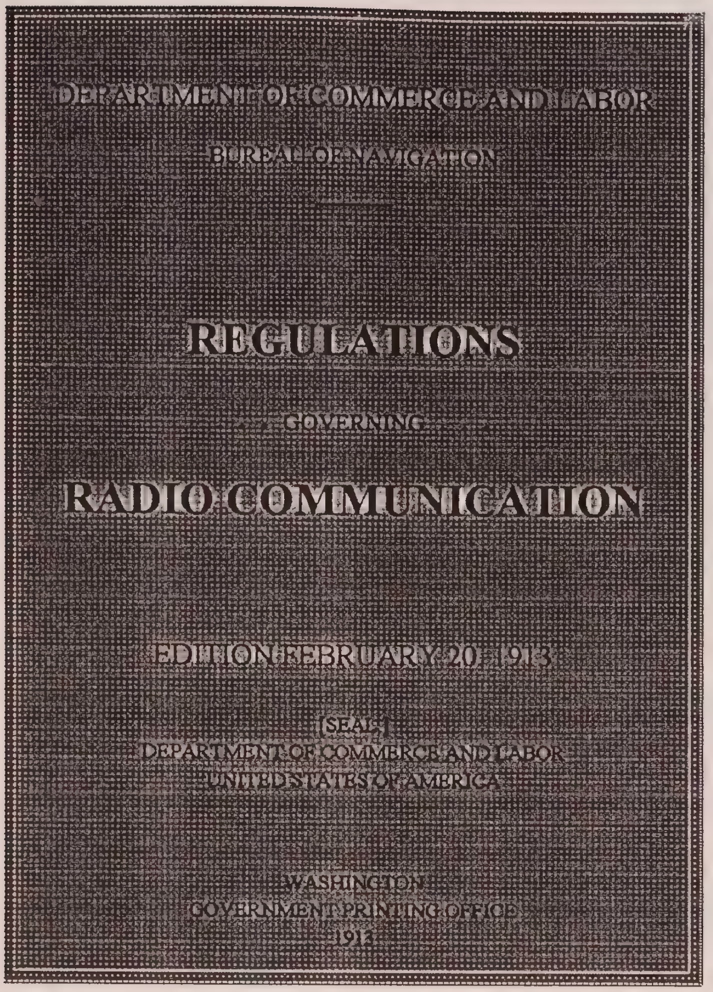
Part 4. GENERAL OBSERVATIONS.

1. All persons communicating with the Department or any of its officers on the subject of radio communication should keep copies of their letters, as the replies will refer to them.
2. Women are eligible as applicants for licenses of any class or grade upon the same conditions as men.
3. Service Regulation VI of the Berlin Convention provides that "No station on shipboard shall be established or worked by private enterprise without authority from the Government to which the vessel is subject. Such authority shall be in the nature of a license issued by said Government." Stations on foreign ships will be licensed by their governments, respectively. Inspectors will report to the Commissioner of Navigation on foreign ships not so licensed.
4. The lists of call signals which may be obtained from radio inspectors and the Commissioner of Navigation will show the location of naval and military stations, referred to in the act, particularly in the tenth, twelfth, thirteenth, sixteenth, and eighteenth regulations.
5. Operator's licenses should be framed and posted in the radio room, and licenses for stations should be accessible at all times to inspectors.
6. These instructions may be amended and supplemented from time to time.

BENJ. S. CABLE,
Acting Secretary.

- United States Early Radio History

Regulations Governing Radio Communication, Feb. 20, 1913.



DEPARTMENT OF COMMERCE AND LABOR
BUREAU OF NAVIGATION

REGULATIONS
GOVERNING
RADIO COMMUNICATION

EDITION FEBRUARY 20, 1913

[SEAL]
DEPARTMENT OF COMMERCE AND LABOR
UNITED STATES OF AMERICA

WASHINGTON
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1913

This is an HTML version of the original government document, *Regulations Governing Radio Communication* [C11.2:R11], which reported the United States radio regulations current at the time of publication.

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REGULATIONS GOVERNING RADIO COMMUNICATION.

DEPARTMENT OF COMMERCE AND LABOR,
OFFICE OF THE SECRETARY,
Washington, February 20, 1913.

To owners and operators of apparatus for radio communication (wireless telegraphy):

The attention of all owners and operators of apparatus for radio communication is invited to the act of August 13, 1912, to regulate radio communication and to the following regulations to carry out that act and the International Radiotelegraphic Convention, proclaimed by the President of the United States.

Department Circular No. 241 includes the laws applying to radio equipment on ships, and its provisions should be known to all owners and operators of ship radio sets. Owners and operators may obtain copies of the act and of the international convention in force and department Circular No. 241 from the Commissioner of Navigation, Department of Commerce and Labor, Washington, D. C., or from the radio inspectors for the districts named below.

The act to regulate radio communication took effect December 13, 1912. It requires the owners and operators of apparatus for radio communication under certain conditions to obtain licenses.

The regulations established by the act, or by the authority of the act, or of the international convention, will be enforced by the Secretary of Commerce and Labor through radio inspectors, collectors of customs, and other officers of the Government.

Violations of the act and regulations will be reported to the chief customs officer of the district in which the offense occurs, who will report the case to the Secretary of Commerce and Labor (Bureau of Navigation) according to the procedure followed in violations of the navigation laws.

ADMINISTRATIVE DISTRICTS.

The Department has established, for the purpose of enforcing through radio inspectors the acts relating to radio communication and the international convention, the following districts with the principal office for each district at the customhouse of the port named. (These districts supersede those announced in Department Circular No. 241, of September 5, 1912.)

1. Boston, Mass---Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut.
2. New York, N. Y---New York (county of New York, Staten Island, Long Island, and counties on the Hudson River to and including Albany, Rensselaer, and Schenectady), and New Jersey (counties of Bergen, Passaic, Essex, Union, Middlesex, Monmouth, Hudson, and Ocean).
3. Baltimore, Md---New Jersey (all counties not included in second district), Pennsylvania (counties of Philadelphia, Delaware, all counties south of the Blue Mountains, and Franklin County), Delaware, Maryland, Virginia, District of Columbia.
4. Savannah, Ga---North Carolina, South Carolina, Georgia, Florida, Porto Rico.
5. New Orleans, La---Alabama, Mississippi, Louisiana, Texas, Tennessee, Arkansas, Oklahoma, New Mexico.
6. San Francisco, Calif--- California, Hawaii, Nevada, Utah, Arizona.
7. Seattle, Wash---Oregon, Washington, Alaska, Idaho, Montana, Wyoming.
8. Cleveland, Ohio---New York (all counties not included in second district), Pennsylvania (all counties not included in third district), West Virginia, Ohio, Michigan (Lower Peninsula).
9. Chicago, Ill---Indiana, Illinois, Wisconsin, Michigan (Upper Peninsula), Minnesota, Kentucky, Missouri, Kansas, Colorado, Iowa, Nebraska, South Dakota, North Dakota.

A radio inspector is authorized in exceptional cases to act outside of his district for the convenience of commerce. In such cases he will communicate before or after acting with the inspector in whose district he has acted. Radio inspectors are authorized to communicate directly with collectors of customs and to cooperate with them in the enforcement of the law.

EXAMINATION OF OPERATORS FOR LICENSES.

The examination of operators for licenses prescribed in the following regulations will be held at the United States navy yards at Boston, Mass., Brooklyn, N. Y., Philadelphia, Pa., Washington, D. C., Norfolk, Va., Charleston, S. C., New Orleans, La., Mare Island (San Francisco), Cal., Puget Sound, Wash.; at the naval stations at Key West, Fla., San Juan, P. R., and Honolulu, Hawaii; at the Naval Academy, Annapolis, Md.; at Fort Sam Houston, San Antonio, Tex., Fort Wood, New York Harbor, Fort Omaha, Nebr., Fort Leavenworth, Kans.; at the School for Enlisted Specialists, Fort Monroe, Va.; at the Army stations at St. Michael and Fairbanks, and by special arrangements at the Army stations at Fort Gibbon and Valdez, Alaska; also at the Bureau of Standards, Washington, D. C.; and by the department's radio inspectors at the customhouses in their districts and elsewhere by arrangement with them. Applicants for licenses should communicate in writing [Form 756] with the commandants or commanding officers of the navy yards or Army posts or Naval or Army stations named, or with the Director of the Bureau of Standards, or with the radio inspectors at the customhouses, at their headquarters, to ascertain the day and hour when they can be examined. Additional opportunities for examination can be ascertained by communicating with the Department's radio inspectors at the customhouses or with the Commissioner of Navigation, Department of Commerce and Labor, Washington, D. C. The licenses to operators will be delivered at the places of examination.

The license provides that the holder shall take the oath for the preservation of the secrecy of messages before a notary public or officer authorized to administer oaths. The operator's license is not valid until this oath is executed.

REGULATIONS.

Part 1. LICENSES--APPARATUS.

A. Apparatus Exempt from License.

The act does not apply either afloat or ashore to--

(*a*) Apparatus for radio communication which merely receives radiograms and is not equipped for sending.

(*b*) Apparatus for the transmission of radiograms exclusively between points in the same State, if the effect of such transmission does not extend beyond the State (so as to interfere with the radio communication of other States), or if the effect of such transmission does not interfere with the reception of radiograms from beyond the State (so as to interfere with the interstate radio communication of that State).

(*c*) Apparatus for radio communication which has been issued to the Organized Militia by the United States Army and is used for military purposes only.

The owner or operator of any apparatus who may be in doubt whether his apparatus, under this paragraph, is exempt from license may write the facts to the radio inspector for his district or to the Commissioner of Navigation, Department of Commerce and Labor, Washington, D. C., before applying for a license.

B. Ship Stations.

The apparatus for transmission of radiograms, or signals on any vessel of the United States not permanently moored, requires a license.

For the purposes of the administration of the act, ship stations on vessels of the United States shall be of these classes:

Class A.--(*a*) Ocean passenger steamers which from October 1, 1912, and (*b*) Great Lakes passenger steamers which from April 1, 1913, are subject to the act of July 23, 1912, and are required to carry two operators and maintain a constant skilled watch.

Class B.--Cargo steamers which (on the Great Lakes from April 1, 1913, and on the ocean from July 1, 1913), with crews of 50 or more, are required to carry two operators, the second of whom may be a member of the crew certified as competent to receive distress calls, etc., maintaining a transmitting service during limited hours but a constant receiving watch.

Class C.--Vessels voluntarily equipped with radio apparatus and not subject to the act of July 23, 1912, after October 1, 1912; April 1, 1913; or July 1, 1913, with no fixed hours of service, such as--

1. Passenger steamers, where the licensed capacity and number of crew combined are less than 50.
2. Cargo steamers with crews of less than 50.
3. Tugs and towing steamers, etc., with crews of less than 50.
4. Motor vessels.
5. Sailing vessels and barges.
6. Yachts.

C. LAND STATIONS.

Apparatus for radio communication on land within the jurisdiction of the United States (excluding the Philippine Islands and excluding apparatus of the Government of the United States) must be licensed if--

(*a*) The apparatus is a means of commercial intercourse among the several States or with foreign nations; or

(*b*) The apparatus transmits radiograms or signals the effect of which at any time extends beyond the State; or

(*c*) The apparatus interferes with the receipt of messages in any State from beyond such State.

For the purposes of the administration of the act, stations on land are divided into two general descriptions, according to geographical location:

I. COAST OR SHORE STATIONS are stations which transmit messages to vessels at sea or on the Great Lakes or whose operations can affect the transmission of messages between ship and ship, or ship and coast. The principal purpose of the regulation of radio communication, international and national, is to secure the greatest efficiency of maritime communication through this agency, especially as a means of promoting safety to life.

II. INLAND STATIONS are stations which can not transmit messages to vessels at sea or on the Great Lakes and whose operations can not affect the transmission of messages between ship and ship, or ship and coast. This may be due to their geographical location or to their range, dependent on power and aerial, or conditions. In some instances actual inspection may be necessary to determine whether a station should be licensed as a coast station or an inland station.

An owner or operator in doubt as to the classification of his station should communicate the facts to the radio inspector of his district when applying for a license.

As the means for enforcing the radio laws are limited, it is necessary to give ship and commercial stations precedence over amateur stations. The owner of an amateur station may operate his station in accordance with the laws if his application for a license has been properly filed but has not been acted on. An application for an operator's license must also have been filed and every effort made to obtain the license before the station may be operated.

CLASSES OF LAND STATIONS.

Both coast stations (the words "coast stations," "shore stations," and "coastal stations" are used interchangeably) and inland stations are divided for the purposes of the administration of the act into the following classes:

1. Public-service stations, (*a*) general, (*b*) limited.
2. Limited commercial stations.
3. Experiment stations for the development of radio communication.
4. Technical and training school stations.
5. General amateur stations.
6. Special amateur stations.
7. Restricted amateur stations.

DESCRIPTION OF CLASSES.

1. (*a*) *Public-service stations, general*, are those open to general business between coast and ships or between land stations, and include those operated by common carriers under the act of February 4, 1887, to regulate commerce, amended June 18, 1910. They are required to maintain a constant receiving service when open. Every coastal station open to public service shall at all times be ready to receive messages of such wave lengths as are required by the international convention in force. (Sec. 4, first regulation, act of Aug. 13, 1912.)

Wherever such stations do not insure a constant service, transmitting and receiving day and night without interruption, the Secretary of the Navy is directed to open naval radio stations within 100 miles thereof to public business. (Sec. 4, eighteenth

regulation, act of Aug. 13, 1912.) The Secretary of War is authorized by the act of May 26, 1900 (31 Stat., 206), to open Alaskan military stations to public service.

1. (*b*) *Public-service stations, limited*, are reserved for a limited public service, determined by the object of the correspondence or other circumstances of the system employed. Stations of this class transmit and receive public messages to and from certain stations only, which are designated in the license.

2. *Limited commercial stations* are not open to public service and are licensed for a specific commercial service or services defined in the license. Stations of this class must not transmit to or accept public messages from other stations.

3. *Experiment stations*.--The Secretary of Commerce and Labor is authorized by section 4 of the act to grant special temporary licenses "to stations actually engaged in conducting experiments for the development of the science of radio communication, or the apparatus pertaining thereto, to carry on special tests, using any amount of power or any wave lengths, at such hours and under such conditions as will insure the least interference with the sending or receipt of commercial or Government radiograms, of distress signals and radiograms, or with the work of other stations." Applicants for such licenses should state any technical result they have already produced, their technical attainments, etc. The fact that an applicant desires to experiment with his equipment does not justify or require a license of this class. Most experiments can be made within the limitations of general and restricted amateur station licenses or by use of an artificial antenna to prevent radiation.

4. *Technical and training school stations* will be licensed in a separate class, according to the degree of technical training attained and imparted and to local conditions.

5. *General amateur stations* are restricted to a transmitting wave length not exceeding 200 meters and a transformer input not exceeding 1 kilowatt. (Sec. 4, fifteenth regulation, act of Aug. 13, 1912.)

6. *Special amateur stations* may be licensed by the Secretary of Commerce and Labor to use a longer wave length and a higher power on special application to the Secretary of Commerce and Labor. Applications for this class from amateurs with less than two years' experience in actual radio communication will not be approved. The application must state the experience and purpose of the applicant, the local conditions of radio communication, especially of maritime radio communication in the vicinity of the station, and a special license will be granted only if some substantial benefit to the art or to commerce apart from individual amusement seems probable. (Sec. 4, fifteenth regulation, act of Aug. 13, 1912.)

7. *Restricted amateur stations*, within 5 nautical miles of a naval or military station, are restricted to a wave length not exceeding 200 meters and to a transformer input not exceeding one-half kilowatt. (Sec. 4, sixteenth regulation, act of Aug. 13, 1912.)

Special stations for exceptional distances are land stations designed (coast) to carry on transoceanic radio communication as between the United States and European countries, or between the Pacific coast and Hawaii, or from the United States over similar long distances at sea to another land station, or (inland) to carry on radio communication overland over exceptional distances. These stations will all come under one of the classifications named above and the license will indicate the stations for which communication is authorized and indicate the range.

General public service, limited public service, limited commercial, special amateur, and special stations which come under the classification of coast stations are subject to the same requirements as to the provision for receiving and relaying distress calls.

Stations operated at different portions of the day for different purposes will require licenses covering each purpose, that is, a station used during the day for limited commercial purposes and during the night for general public service will require two licenses.

Part 2. LICENSES--OPERATORS.

The third section of the act prescribes that every radio apparatus required to be licensed shall at all times while in use and operation be in charge or under the supervision of a person or persons licensed for that purpose by the Secretary of Commerce and Labor.

Licenses approved and issued by the Secretary of Commerce and Labor to operators will be delivered to successful applicants after passing examinations given by the officers named under the head "Examination of operators for licenses."

[NOTE.--*Apprentices*.--Under the supervision of a licensed operator an apprentice or unlicensed person may learn the art by the actual use of the apparatus, but the licensed operator who fails to enforce obedience to the regulations by the apprentice or unlicensed person serving under his supervision is liable to penalties as if he had himself violated the regulations.]

Operators' licenses are divided into the following grades:

I. Commercial:
  1. First grade.
  2. Second grade.
  3. Cargo grade.
  4. Extra grade.
  5. Temporary permit.

II. Amateur:
  6. First grade.
  7. Second grade.

III. Technical:
  8. Experiment and instruction grade.

The requirements which applicants must meet to secure licenses of the several grades and the scope and limitations of employment authorized by the licenses of the several grades are as follows:

I. COMMERCIAL.

First grade.--The applicant must pass a satisfactory examination in--

(*a*) The adjustment, operation, and care of the apparatus, including correction of faults and change from one wave length to another.

(*b*) Transmitting and receiving by ear at a speed of not less than 20 words a minute in Continental Morse (five letters to the word).

(*c*) Use and care of storage battery or other auxiliary power apparatus.

(*d*) Knowledge of the international regulations in force applying to radio communication.

(*e*) Knowledge of the requirements of the acts of Congress to regulate radio communication--at present sections 3, 4, 5, 6, and 7 of the act of August 13, 1912. No stated experience is required, but the examination given is such that a person must be familiar with all parts and principles embodied in a radio set and auxiliary battery and power apparatus used, to obtain a license.

(1) The commercial first-grade license qualifies the operator for employment at any ship or land station of any class and is the highest certificate indicative of ability as radio operator issued at this time.

(2) Every ship station of class A must carry two or more operators, at least one of whom must have a valid commercial first-grade license, or, in the case of a foreign ship, having an equivalent foreign license.

[NOTE.--The requirements for this grade are the same as the international requirements imposed on operators of foreign ships by international regulation, except the knowledge of the use and care of storage battery or other auxiliary and of the act of August 13, 1912. Inspectors will allow a reasonable time to foreign operators on foreign ships to meet the additional requirements supplying them as promptly as practicable with copies of the act of August 13, 1912.]

(3) Every ship station of class A on a steamer carrying 100 or more passengers must carry at least two operators having commercial first-grade licenses or equivalent foreign licenses.

(4) Every land station open to general public service must have at least one first-grade operator.

(5) Every coast station of class 1 must have commercial first grade operators.

Second grade.--The applicant must pass a satisfactory examination in all the subjects prescribed above for the first grade, with the exception that the minimum speed in transmitting and receiving shall be not less than 12 words a minute in Continental Morse, and the examination in the subjects will not be as comprehensive as that given first-grade operators.

(1) An operator licensed as commercial second grade, on subsequent compliance with the speed test for the first grade, and further examination on the subjects named, may have his license raised to the first grade by the indorsement in red ink on the face of his license "Examined on [date] at [place] and passed first grade by [examining officer's signature]," or a first-grade license may be issued.

(2) Every ship station under class A (except steamers carrying 100 or more passengers) must carry a second operator, having the commercial second-grade license, or higher, or an equivalent foreign license.

(3) Every ship station under classes B and C must carry at least one operator licensed as commercial second grade, or higher, or an equivalent foreign license where such are issued. Class B covers cargo steamers and does not apply to the Great Lakes before April 1, 1913, or to the seaboard before July 1, 1913.

(4) Every coast station of classes 2 and 6 must have at least one operator holding a valid commercial second-grade license.

Cargo grade.--Section 2 of the act of July 23, 1912, provides:

> On cargo steamers, in lieu of the second operator provided for in this act, there may be substituted a member of the crew or other person who shall be duly certified and entered in the ship's log as competent to receive and understand distress calls or other usual calls indicating danger, and to aid in maintaining a constant wireless watch so far as required for the safety of life.

Examining officers and radio inspectors are authorized to issue a certificate, in the form of an amateur first-grade license, after examination, to indicate the facts above enumerated in the case of a member of the crew or other person, and experience under this form will be credited by examining officers if the holder later applies for examination for a commercial license.

Extra grade.--The Department desires to establish, if practicable, a corps of specially trained and trustworthy radio operators who may be available for Government service. For this purpose a special license will be issued to operators holding the commercial first-grade license, whose certificates of skill in radio communication, issued under the act of June 24, 1910, and licenses under this act record 12 months' satisfactory ocean service as shown by masters' indorsement. A special examination in the radio regulations of the United States Navy will also be required. The commercial extra-grade license will be issued during 1913, and will be the subject of a special circular.

Temporary permit.--Section 3 of the act of August 13, 1912, provides:

> In case of emergency the Secretary of Commerce and Labor may authorize a collector of customs to issue a temporary permit, in lieu of a license, to the operator on a vessel subject to the radio ship act of June 24, 1910.

The temporary permit is to be issued only in cases of emergency and will be valid for only one voyage. If practicable, the radio inspector should ascertain the applicant's qualifications before the collector issues a temporary permit. The collector will report in each case to the Commissioner of Navigation the circumstances which rendered necessary the issue of a temporary permit.

CERTIFICATES OF SKILL IN RADIO COMMUNICATION.

Certificates issued under the act of June 24, 1910, will not be valid substitutes for the licenses required by the act of August 13, 1912, on and after December 13, 1912. The holders of these certificates should present themselves to the examining officers and radio inspectors for examination and license under the new act. Examining officers are requested to give precedence, as far as practicable, to the holders of these certificates and to exercise their discretion in giving credence to the former examination on which the certificate was issued, and especially to give due credit to satisfactory service records indorsed thereon. Operators should retain these certificates, as they will prove useful in applications for licenses of the various classes and grades under the radio-communication act and in establishing claims to the benefits accruing to those in the service of the merchant marine of the United States.

II. AMATEUR.

General.--Amateurs, before applying for licenses, should read and understand the essential parts of the International Radiotelegraphic Convention in force and sections 3, 4, 5, and 7 of the act of August 13, 1912. The Department recognizes that radio communication offers a wholesome form of instructive recreation for amateurs. At the same time its use for this purpose must observe strictly the rights of others to the uninterrupted use of apparatus for important public and commercial purposes. The Department will not knowingly issue a license to an amateur who does not recognize and will not obey this principle. To this end the intelligent reading of the international convention and the act of Congress is prescribed as the first step to be taken by amateurs. Copies of the two publications may be secured for this purpose from the department's radio inspectors or from the Commissioner of Navigation, but they are not for public distribution.

First grade.--The applicant must have a sufficient knowledge of the adjustment and operation of the apparatus which he wishes to operate, and of the regulations of the international convention and acts of Congress in so far as they relate to interference with other radio communication and impose certain duties on all grades of operators. The applicant must be able to transmit and receive in Continental Morse, at a speed sufficient to enable him to recognize distress calls or the official "keep-out" signals. A speed of at least five words per minute (five letters to the word) must be attained. Applicants for licenses of this grade residing at or near any place where examinations are held will communicate with examining officers and will be examined for licenses of amateur grades. At places remote from examining officers, applicants will file applications with the radio inspector, who will endeavor to arrange for examinations on his inspection trips.

Second grade.--The requirements for the second grade will be the same as for the first grade. The second-grade license will be issued only where an applicant can not be examined or until he can be examined. An examining officer or radio inspector is authorized in his discretion to waive an actual examination of an applicant for an amateur license, if the amateur for adequate reasons can not present himself for examination but in writing can satisfy the examining officer or radio inspector that he is qualified to hold a license and will conform to its obligations.

III. TECHNICAL.

Experiment and instruction grade.--The operator's license for this grade is a commercial license, indorsed by the Secretary of Commerce and Labor with a statement of the special purposes for which it is valid. It should be forwarded to the Commissioner of Navigation with a recommendation, if practicable, from a radio inspector or examining officer.

Experimenters and instructors, of scientific attainments in the art of radio communication, whose knowledge of the radio laws satisfies the radio inspector or the examining officer, may obtain this grade licenses, provided they are able to transmit and receive in the Continental Morse Code at a speed sufficient to enable them to recognize distress calls or the "keep-out" signals.

This license has no reference to the instruction of radio operators as such, but is required by those operating apparatus licensed as experimental stations but who are unable to obtain commercial-grade operators' licenses.

Part 3. APPLICATIONS FOR LICENSES.

Station licenses for the use and operation of apparatus for radio communication under the act may be issued only to citizens of the United States or Porto Rico or to a company incorporated under the laws of some State or Territory or of the United States or Porto Rico.

Licenses can be issued to clubs if they are incorporated or if a member will accept the responsibility for the operation of the apparatus, carrying with it the possibility of being penalized for infraction of the laws.

I. SHIP STATIONS.

Applications for licenses for ship stations should be addressed to the radio inspector for the district including the port whence the vessel usually departs. All the inspectors are now on duty at the headquarters of the administrative districts, as shown on pages 3 and 4.

The application by the company operating the apparatus should state the name of the ship in respect of which the license is required. The radio inspector will then issue the department's blank form of application for license to be filled in by the applicant and returned to the radio inspector with a statement when the ship will be in port and its radio apparatus may be thoroughly inspected.

II. LAND STATIONS.

Coast stations.--The several classes of coast stations will be licensed, for reasons already assigned, in advance of inland stations.

Applications for licenses for coast stations should be addressed to the department's radio inspector for the district in which the station is located, who will forward the application Form 757.

All land stations, except general and restricted amateur stations, should state their location in latitude and longitude to seconds.

The application will state the class of the station for which a license is desired, with particulars to show its proper classification, approximate transmitting range with a similar station, and precise location (State, county, city, or town, street and number, or, if outside of city or town limits, as exact a description of its locality as may be). A blank form for apparatus will be sent when Form 757 has been filed, and arrangements made for inspection if necessary. Requests for licenses for coast stations will be taken up in the order of classes, as indicated above, and in the order of date received only so far as the relative importance of stations will permit. Amateur applicants who state that they have read the International Radiotelegraphic Convention in force and the act of August 13, 1912, will receive attention before those who have not.

Inland stations.--The issue of licenses to inland stations, as already defined, will be taken up after ship and coast stations. The procedure for application for license will be the same as for coast stations.

III. FORMS.

(*a*) The several forms of applications and licenses for operators will be issued through examining officers (through the War and Navy Departments) and radio inspectors. The licenses will be numbered serially.

(*b*) The forms and licenses for stations and apparatus will be issued through radio inspectors. Licenses for general and restricted amateur stations are issued by them direct to applicant. Station licenses of all other classes are issued from the office of the Commissioner of Navigation, Department of Commerce and Labor.

IV. COMMERCIAL OPERATORS.

Applications for operators' licenses of the several commercial grades should be addressed to the nearest examining officer or radio inspector, who will arrange for examinations. Where the applicant is not within reasonable distance of an examining officer or radio inspector he may forward his application with a statement of the facts.

Commercial licenses can only be obtained by examination. Where applicants are at remote points or can not proceed to examining offices efforts will be made to examine them through radio inspectors when they are in that vicinity, but special trips can not be made for that purpose.

V. AMATEUR OPERATORS.

(*a*) Amateurs in the seaboard States should write to the nearest examining officer in their vicinity for Form 756 (application for operator's license) and to the radio inspector in their vicinity for Form 757 (application for license for land station). If the application for operator's license is also made to the radio inspector, both applications should be forwarded in the same envelope.

(*b*) Amateurs operators at points remote from examining officers and radio inspectors will be issued second-grade amateur licenses without examination, as explained previously. Examinations for first-grade licenses will be given by the radio inspector when he is in that vicinity, but special trips can not be made for this purpose.

Part 4. GENERAL OBSERVATIONS.

1. All persons communicating with the department or any of its officers on the subject of radio communication should keep copies of their letters, as the replies will refer to them.
2. Women are eligible as applicants for licenses of any class or grade upon the same conditions as men.
3. The service regulations of the radiotelegraphic convention in force provides that "no station on shipboard shall be established or worked by private enterprise without authority from the Government to which the vessel is subject." Such authority shall be in the nature of a license issued by said Government. Stations on foreign ships will be licensed by their Governments, respectively. Inspectors will report to the Commissioner of Navigation on foreign ships not so licensed.
4. The lists of call signals when issued by the Department of Commerce and Labor may be obtained from the radio inspectors or the Commissioner of Navigation and will show the location of naval and military stations.
5. Operator's licenses should be framed and posted in the radio room, and licenses for stations should be accessible at all times to inspectors.
6. Operator's licenses should indicate on their face that the oath has been executed. This statement should be signed by a notary public.
7. Stations equipped to receive only do not require a license.
8. No fees are charged for any operator or station license.

9. Licensed stations require licensed operators.

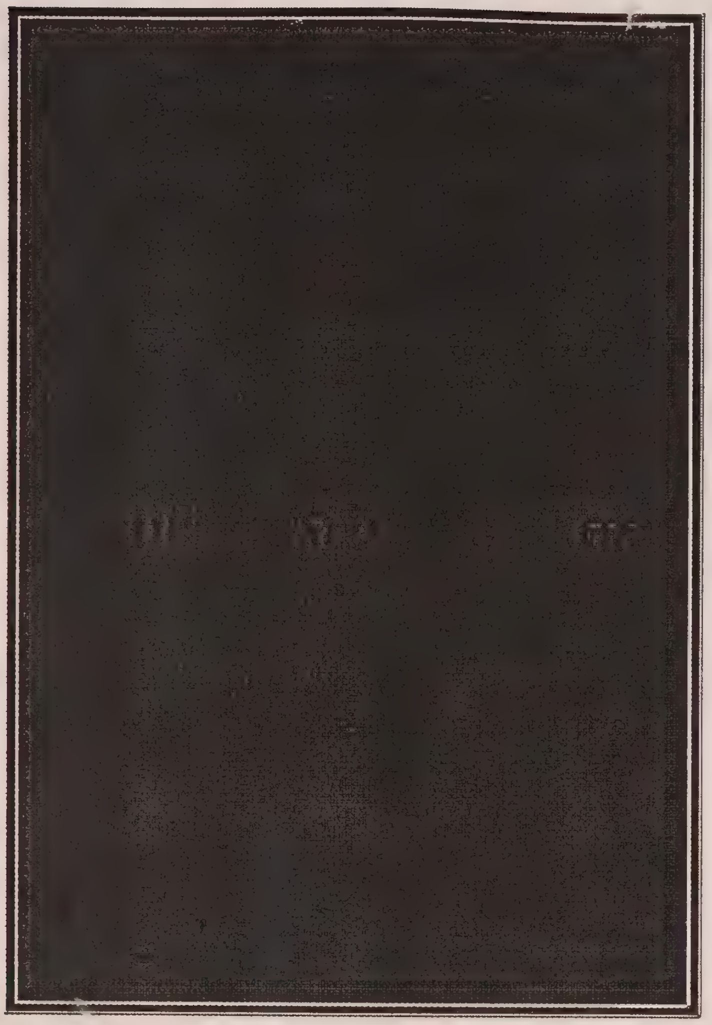
10. Amateur stations within 5 miles of naval or military stations need not have been in actual operation on or before August 13, 1912, to obtain a license for a restricted amateur station.

11. These instructions may be amended and supplemented from time to time.

BENJ. S. CABLE,
Acting Secretary.

- United States Early Radio History

Regulations Governing Radio Communication, July 1, 1913.



This is an HTML version of the original government document, *Regulations Governing Radio Communication* [C11.2:R11], which reported the United States radio regulations current at the time of publication.

This HTML version is based on a photocopy of the original 15-page publication. It incorporates all of the original contents (except for some minor elements, such as page number references), keeping as much as possible the layout of the original document.

REGULATIONS GOVERNING RADIO COMMUNICATION.

DEPARTMENT OF COMMERCE,
OFFICE OF THE SECRETARY,
Washington, July 1, 1913.

To owners and operators of apparatus for radio communication (wireless telegraphy):

The attention of all owners and operators of apparatus for radio communication is invited to the act of August 13, 1912, to regulate radio communication and to the following regulations to carry out that act and the International Radiotelegraphic Convention, proclaimed by the President of the United States.

The Department "Regulations for Radio Apparatus and Operators on Steamers" include the laws applying to radio equipment on ships, and its provisions should be known to all owners and operators of ship radio sets. Owners and operators may obtain copies of the act, the international convention in force, and the "Regulations for Radio Apparatus and Operators on Steamers" from the Commissioner of Navigation, Department of Commerce, Washington, D. C., or from the radio inspectors for the districts named below.

The act to regulate radio communication took effect December 13, 1912. It requires the owners and operators of apparatus for radio communication under certain conditions to obtain licenses.

The regulations established by the act, or by the authority of the act, or of the international convention, will be enforced by the Secretary of Commerce through radio inspectors, collectors of customs, and other officers of the Government.

Violations of the act and regulations will be reported to the chief customs officer of the district in which the offense occurs, who will report the case to the Secretary of Commerce (Bureau of Navigation) according to the procedure followed in violations of the navigation laws.

ADMINISTRATIVE DISTRICTS.

The Department has established, for the purpose of enforcing through radio inspectors the acts relating to radio communication

and the international convention, the following districts with the principal office for each district at the customhouse of the port named:

1. Boston, Mass---Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut.
2. New York, N. Y---New York (county of New York, Staten Island, Long Island, and counties on the Hudson River to and including Albany, Rensselaer, and Schenectady), and New Jersey (counties of Bergen, Passaic, Essex, Union, Middlesex, Monmouth, Hudson, and Ocean).
3. Baltimore, Md---New Jersey (all counties not included in second district), Pennsylvania (counties of Philadelphia, Delaware, all counties south of the Blue Mountains, and Franklin County), Delaware, Maryland, Virginia, District of Columbia.
4. Savannah, Ga---North Carolina, South Carolina, Georgia, Florida, Porto Rico.
5. New Orleans, La---Alabama, Mississippi, Louisiana, Texas, Tennessee, Arkansas, Oklahoma, New Mexico.
6. San Francisco, Calif--- California, Hawaii, Nevada, Utah, Arizona.
7. Seattle, Wash---Oregon, Washington, Alaska, Idaho, Montana, Wyoming.
8. Cleveland, Ohio---New York (all counties not included in second district), Pennsylvania (all counties not included in third district), West Virginia, Ohio, Michigan (Lower Peninsula).
9. Chicago, Ill---Indiana, Illinois, Wisconsin, Michigan (Upper Peninsula), Minnesota, Kentucky, Missouri, Kansas, Colorado, Iowa, Nebraska, South Dakota, North Dakota.

A radio inspector is authorized in exceptional cases to act outside of his district for the convenience of commerce. In such cases he will communicate before or after acting with the inspector in whose district he has acted. Radio inspectors are authorized to communicate directly with collectors of customs and to cooperate with them in the enforcement of the law.

EXAMINATION OF OPERATORS FOR LICENSES.

The examination of operators for licenses prescribed in the following regulations will be held at the United States navy yards at Boston, Mass., Brooklyn, N. Y., Philadelphia, Pa., Washington, D. C., Norfolk, Va., Charleston, S. C., New Orleans, La., Mare Island (San Francisco), Cal., Puget Sound, Wash.; at the naval stations at Key West, Fla., San Juan, P. R., Colon, Panama, and Honolulu, Hawaii; at the Naval Academy, Annapolis, Md.; at Fort Sam Houston, San Antonio, Tex., Fort Wood, New York Harbor, Fort Omaha, Nebr., Fort Leavenworth, Kans.; at the School for Enlisted Specialists, Fort Monroe, Va.; at the Army stations at St. Michael and Fairbanks, and by special arrangements at the Army stations at Fort Gibbon and Valdez, Alaska; also at the Bureau of Standards, Washington, D. C.; and by the department's radio inspectors at the customhouses in their districts and elsewhere by arrangement with them. Applicants for licenses should communicate in writing [Form 756] with the commandants or commanding officers of the navy yards or Army posts or Naval or Army stations named, or with the Director of the Bureau of Standards, or with the radio inspectors at the customhouses, at their headquarters, to ascertain the day and hour when they can be examined. Additional opportunities for examination can be ascertained by communicating with the Department's radio inspectors at the customhouses. The licenses to operators will be delivered at the places of examination.

The license provides that the holder shall take the oath for the preservation of the secrecy of messages before a notary public or officer authorized to administer oaths. The operator's license is not valid until this oath is executed.

REGULATIONS.

Part 1. LICENSES--APPARATUS.

A. Apparatus Exempt from License.

The act does not apply either afloat or ashore to--

(*a*) Apparatus for radio communication which merely receives radiograms and is not equipped for sending.

(*b*) Apparatus for the transmission of radiograms exclusively between points in the same State, if the effect of such transmission does not extend beyond the State (so as to interfere with the radio communication of other States), or if the effect of such transmission does not interfere with the reception of radiograms from beyond the State (so as to interfere with the interstate radio communication of that State).

(*c*) Apparatus for radio communication which has been issued to the Organized Militia by the War Department or to the Naval Militia by the Navy Department and is used for official purposes only.

The owner or operator of any apparatus who may be in doubt whether his apparatus, under this paragraph, is exempt from license may write the facts to the radio inspector for his district before applying for a license.

B. Ship Stations.

The apparatus for transmission of radiograms, or signals on any vessel of the United States not permanently moored, requires a license.

For the purposes of the administration of the act, ship stations on vessels of the United States shall be of these classes:

Class A.--Ocean and Great Lakes passenger steamers subject to the act of July 23, 1912, and required to carry two operators and maintain a constant skilled watch.

Class B.--Cargo steamers with crews of 50 or more, required to carry two operators, the second of whom may be a member of the crew certified as competent to receive distress calls, etc., maintaining a transmitting service during limited hours but a constant receiving watch.

Class C.--Vessels voluntarily equipped with radio apparatus and not subject to the act of June 24, 1910, as amended July 23, 1912, with no fixed hours of service, such as--

1. Passenger steamers, where the licensed capacity and number of crew combined are less than 50.
2. Cargo steamers with crews of less than 50.
3. Tugs and towing steamers, etc., with crews of less than 50.
4. Motor vessels.
5. Sailing vessels and barges.
6. Yachts.
7. Steamers of any kind plying between ports or places less than 200 miles apart.

C. LAND STATIONS.

Apparatus for radio communication on land within the jurisdiction of the United States (excluding the Philippine Islands and excluding apparatus of the Government of the United States) must be licensed if--

(*a*) The apparatus is a means of commercial intercourse among the several States or with foreign nations; or

(*b*) The apparatus transmits radiograms or signals the effect of which at any time extends beyond the State; or

(*c*) The apparatus interferes with the receipt of messages in any State from beyond such State.

For the purposes of the administration of the act, stations on land are divided into two general descriptions, according to geographical location:

I. COAST OR SHORE STATIONS are stations which transmit messages to vessels at sea or on the Great Lakes or whose operations can affect the transmission of messages between ship and ship, or ship and coast. Vessels of the United States permanently moored are classed as coast stations under the International Convention.

II. INLAND STATIONS are stations which can not transmit messages to vessels at sea or on the Great Lakes and whose operations can not affect the transmission of messages between ship and ship, or ship and coast. This may be due to their geographical location or to their range, dependent on power and aerial, or conditions. In some instances actual inspection may be necessary to determine whether a station should be licensed as a coast station or an inland station.

An owner or operator in doubt as to the classification of his station should communicate the facts to the radio inspector of his district when applying for a license.

As the means for enforcing the radio laws are limited, it is necessary to give ship and commercial stations precedence over amateur stations. The owner of an amateur station may operate his station in accordance with the laws if his application for a license has been properly filed but has not been acted on. An application for an operator's license must also have been filed and every effort made to obtain the license before the station may be operated.

"Provisional" station licenses are issued to amateurs remote from the headquarters of the radio inspector of the district in which the station is located. These licenses are issued as a matter of convenience and record. If, upon inspection, the station is found to comply with the law, the inspector will strike out the word "Provisional" and insert the date of inspection and his signature at the bottom of the license.

If such a station is found not to comply with the law, the provisional license may be canceled until such time as the apparatus is readjusted to meet the requirements of the law: *Provided, however*, that consideration will be given to any reports of interference filed against such a station.

CLASSES OF LAND STATIONS.

Both coast stations (the words "coast stations," "shore stations," and "coastal stations" are used interchangeably) and inland stations are divided for the purposes of the administration of the act into the following classes:

1. Public-service stations, (*a*) general, (*b*) limited.
2. Limited commercial stations.
3. Experiment stations for the development of radio communication.
4. Technical and training school stations.
5. General amateur stations.
6. Special amateur stations.
7. Restricted amateur stations.

DESCRIPTION OF CLASSES.

1. (*a*) *Public-service stations, general*, are those open to general business between coast and ships or between land stations,

and include those operated by common carriers under the act of February 4, 1887, to regulate commerce, amended June 18, 1910. They are required to maintain a constant receiving service when open. Every coastal station open to public service shall at all times be ready to receive messages of such wave lengths as are required by the international convention in force. (Sec. 4, first regulation, act of Aug. 13, 1912.)

Wherever such stations do not insure a constant service, transmitting and receiving day and night without interruption, the Secretary of the Navy is directed to open naval radio stations within 100 miles thereof to public business. (Sec. 4, eighteenth regulation, act of Aug. 13, 1912.) The Secretary of War is authorized by the act of May 26, 1900 (31 Stat., 206), to open Alaskan military stations to public service.

1. (*b*) *Public-service stations, limited*, are reserved for a limited public service, determined by the object of the correspondence or other circumstances of the system employed. Stations of this class transmit and receive public messages to and from certain stations only, which are designated in the license.

2. *Limited commercial stations* are not open to public service and are licensed for a specific commercial service or services defined in the license. Stations of this class must not transmit to or accept public messages from other stations.

3. *Experiment stations*.--The Secretary of Commerce is authorized by section 4 of the act to grant special temporary licenses "to stations actually engaged in conducting experiments for the development of the science of radio communication, or the apparatus pertaining thereto, to carry on special tests, using any amount of power or any wave lengths, at such hours and under such conditions as will insure the least interference with the sending or receipt of commercial or Government radiograms, of distress signals and radiograms, or with the work of other stations." Applicants for such licenses should state any technical result they have already produced, their technical attainments, etc. The fact that an applicant desires to experiment with his equipment does not justify or require a license of this class. Most experiments can be made within the limitations of general and restricted amateur station licenses or by use of an artificial antenna to prevent radiation.

4. *Technical and training school stations* will be licensed in a separate class, according to the degree of technical training attained and imparted and to local conditions.

5. *General amateur stations* are restricted to a transmitting wave length not exceeding 200 meters and a transformer input not exceeding 1 kilowatt. (Sec. 4, fifteenth regulation, act of Aug. 13, 1912.)

6. *Special amateur stations* may be licensed by the Secretary of Commerce to use a longer wave length and a higher power on special application to the Secretary of Commerce. Applications for this class from amateurs with less than two years' experience in actual radio communication will not be approved. The application must state the experience and purpose of the applicant, the local conditions of radio communication, especially of maritime radio communication in the vicinity of the station, and a special license will be granted only if some substantial benefit to the art or to commerce apart from individual amusement seems probable. (Sec. 4, fifteenth regulation, act of Aug. 13, 1912.)

7. *Restricted amateur stations*, within 5 nautical miles of a naval or military station, are restricted to a wave length not exceeding 200 meters and to a transformer input not exceeding one-half kilowatt. (Sec. 4, sixteenth regulation, act of Aug. 13, 1912.)

Special stations for exceptional distances are land stations designed (coast) to carry on transoceanic radio communication as between the United States and European countries, or between the Pacific coast and Hawaii, or from the United States over similar long distances at sea to another land station, or (inland) to carry on radio communication overland over exceptional distances. These stations will all come under one of the classifications named above and the license will indicate the stations for which communication is authorized and indicate the range.

General public service, limited public service, limited commercial, special amateur, and special stations which come under the classification of coast stations are subject to the same requirements as to the provision for receiving and relaying distress calls.

Stations operated at different portions of the day for different purposes will require licenses covering each purpose; that is, a station used during the day for limited commercial purposes and during the night for general public service will require two licenses.

Part 2. LICENSES--OPERATORS.

The third section of the act prescribes that every radio apparatus required to be licensed shall at all times while in use and operation be in charge or under the supervision of a person or persons licensed for that purpose by the Secretary of Commerce.

Licenses approved and issued by the Secretary of Commerce to operators will be delivered to applicants after passing examinations given by the officers named under the head "Examination of operators for licenses."

[NOTE.--*Apprentices*.--Under the supervision of a licensed operator an apprentice or unlicensed person may learn the art by the actual use of the apparatus, but the licensed operator who fails to enforce obedience to the regulations by the apprentice or unlicensed person serving under his supervision is liable to penalties as if he had himself violated the regulations.]

Operators' licenses are divided into the following grades:

I. Commercial:
  1. First grade.
  2. Second grade.
  3. Cargo grade.
  4. Extra grade.
  5. Temporary permit.

II. Amateur:
  6. First grade.
  7. Second grade.
III. Technical:
  8. Experiment and instruction grade.

The requirements which applicants must meet to secure licenses of the several grades and the scope and limitations of employment authorized by the licenses of the several grades are as follows:

I. COMMERCIAL.

First grade.--The applicant must pass a satisfactory examination in--

(*a*) The adjustment, operation, and care of the apparatus, including correction of faults and change from one wave length to another.

(*b*) Transmitting and receiving by ear at a speed of not less than 20 words a minute in Continental Morse (five letters to the word).

(*c*) Use and care of storage battery or other auxiliary power apparatus.

(*d*) Knowledge of the international regulations in force applying to radio communication.

(*e*) Knowledge of the requirements of the acts of Congress to regulate radio communication--sections 3, 4, 5, 6, and 7 of the act of August 13, 1912. No stated experience is required, but the examination given is such that a person must be familiar with all parts and principles embodied in a ratio set and auxiliary battery and power apparatus used, to obtain a license.

(1) The commercial first-grade license qualifies the operator for employment at any ship or land station of any class and is the highest certificate indicative of ability as radio operator issued at this time.

(2) Every ship station of class A must carry two or more operators, at least one of whom must have a valid commercial first-grade license, or, in the case of a foreign ship, having an equivalent foreign license.

[NOTE.--The requirements for this grade are the same as the international requirements imposed on operators of foreign ships by international regulation, except the knowledge of the use and care of storage battery or other auxiliary and of the act of August 13, 1912. Inspectors will allow a reasonable time to foreign operators on foreign ships to meet the additional requirements supplying them as promptly as practicable with copies of the act of August 13, 1912.]

(3) Every ship station of class A on a steamer carrying 100 or more passengers, and under the London convention vessels having constant service, must carry at least two operators having commercial first-grade licenses.

(4) Every land station open to general public service must have at least one first-grade operator.

(5) Every coast station of class 1 must have commercial first grade operators.

Second grade.--The applicant must pass a satisfactory examination in all the subjects prescribed above for the first grade, with the exception that the minimum speed in transmitting and receiving shall be not less than 12 words a minute in Continental Morse, and the examination in the subjects will not be as comprehensive as that given first-grade operators.

(1) An operator licensed as commercial second grade, on subsequent compliance with the speed test for the first grade, and further examination on the subjects named, may have his license raised to the first grade by the indorsement in red ink on the face of his license "Examined on [date] at [place] and passed first grade by [examining officer's signature]," or a first-grade license may be issued.

(2) Every ship station under class A (except steamers carrying 100 or more passengers) must carry a second operator, having the commercial second-grade license, or higher.

(3) Every ship station under classes B and C must carry at least one operator licensed as commercial second grade, or higher.

(4) Every coast station of classes 2 and 6 must have at least one operator holding a valid commercial second-grade license.

Cargo grade.--Section 2 of the act of July 23, 1912, provides:

> On cargo steamers, in lieu of the second operator provided for in this act, there may be substituted a member of the crew or other person who shall be duly certified and entered in the ship's log as competent to receive and understand distress calls or other usual calls indicating danger, and to aid in maintaining a constant wireless watch so far as required for the safety of life.

The examination will be conducted so as to determine the following facts:

(1) That the applicant is sufficiently familiar with the Continental Morse Code to recognize the distress signal (SOS), when included in a list of other words or signals sent slowly. (Approximately five words a minute).

(2) That the applicant is sufficiently familiar with the Continental Morse Code to recognize the radio call letters of the vessel on which he desires to operate when sent slowly and repeated several times.

(3) That the applicant is sufficiently familiar with the type of the receiving apparatus of the vessel on which he desires to operate to determine by a buzzer or similar test that the detector or receiving apparatus is properly adjusted to receive signals.

Examining officers and radio inspectors are authorized to issue a certificate, in the form of an amateur first-grade license, after examination, to indicate the facts above enumerated in the case of a member of the crew or other person, and experience under this form will be credited by examining officers if the holder later applies for examination for a commercial license. These licenses will be marked "Cargo" in the upper right-hand corner under the serial number.

Extra grade.--The Department desires to establish, if practicable, a corps of specially trained and trustworthy radio operators who may be available for Government service. For this purpose a special license will be issued to operators holding the commercial first-grade license, whose certificates of skill in radio communication, issued under the act of June 24, 1910, and licenses under this act record 12 months' satisfactory ocean service as shown by masters' indorsement. A special examination in

the radio regulations of the United States Navy will also be required. The commercial extra-grade license will be issued during 1913, and will be the subject of a special circular.

Temporary permit.--Section 3 of the act of August 13, 1912, provides:

> In case of emergency the Secretary of Commerce may authorize a collector of customs to issue a temporary permit, in lieu of a license, to the operator on a vessel subject to the radio ship act of June 24, 1910.

The temporary permit is to be issued only in cases of emergency and will be valid for only one voyage. The collector will report in each case to the Commissioner of Navigation the circumstances which rendered necessary the issue of a temporary permit.

Radio operators holding licenses of any grade or class and applying for examination for any other grade or class must submit to the examining officer an additional form No. 756, in duplicate. If a new license is issued, the license held by the applicant must be surrendered.

II. AMATEUR.

General.--Amateurs, before applying for licenses, should read and understand the essential parts of the International Radiotelegraphic Convention in force and sections 3, 4, 5, and 7 of the act of August 13, 1912. The Department recognizes that radio communication offers a wholesome form of instructive recreation for amateurs. At the same time, its use for this purpose must observe strictly the rights of others to the uninterrupted use of apparatus for important public and commercial purposes. The Department will not knowingly issue a license to an amateur who does not recognize and will not obey this principle. To this end the intelligent reading of the international convention and the act of Congress is prescribed as the first step to be taken by amateurs. Copies of the two publications may be secured for this purpose from the Department's radio inspectors or from the Commissioner of Navigation, but they are not for public distribution.

First grade.--The applicant must have a sufficient knowledge of the adjustment and operation of the apparatus which he wishes to operate, and of the regulations of the international convention and acts of Congress in so far as they relate to interference with other radio communication and impose certain duties on all grades of operators. The applicant must be able to transmit and receive in Continental Morse, at a speed sufficient to enable him to recognize distress calls or the official "keep-out" signals. A speed of at least five words per minute (five letters to the word) must be attained. Applicants for licenses of this grade residing at or near any place where examinations are held will communicate with examining officers and will be examined for licenses of amateur grades. At places remote from examining officers, applicants will file applications with the radio inspector, who will endeavor to arrange for examinations on his inspection trips.

Second grade.--The requirements for the second grade will be the same as for the first grade. The second-grade license will be issued only where an applicant can not be examined or until he can be examined. An examining officer or radio inspector is authorized in his discretion to waive an actual examination of an applicant for an amateur license, if the amateur for adequate reasons can not present himself for examination but in writing can satisfy the examining officer or radio inspector that he is qualified to hold a license and will conform to its obligations.

III. TECHNICAL.

Experiment and instruction grade.--The operator's license for this grade is a commercial license, indorsed by the Secretary of Commerce with a statement of the special purposes for which it is valid. It should be forwarded to the Commissioner of Navigation with a recommendation, if practicable, from a radio inspector or examining officer.

Experimenters and instructors, of scientific attainments in the art of radio communication, whose knowledge of the radio laws satisfies the radio inspector or the examining officer, may obtain this grade licenses, provided they are able to transmit and receive in the Continental Morse Code at a speed sufficient to enable them to recognize distress calls or the "keep-out" signals.

This license has no reference to the instruction of radio operators as such, but is required by those operating apparatus licensed as experimental stations but who are unable to obtain commercial-grade operators' licenses.

Part 3. APPLICATIONS FOR LICENSES.

Station licenses for the use and operation of apparatus for radio communication under the act may be issued only to citizens of the United States or Porto Rico or to a company incorporated under the laws of some State or Territory or of the United States or Porto Rico.

Licenses can be issued to clubs if they are incorporated or if a member will accept the responsibility for the operation of the apparatus, carrying with it the possibility of being penalized for infraction of the laws.

I. SHIP STATIONS.

Applications for licenses for ship stations should be addressed to the radio inspector for the district including the port whence the vessel usually departs.

The application by the company operating the apparatus should state the name of the ship in respect of which the license is required. The radio inspector will then issue the Department's blank form of application for license to be filled in by the applicant and returned to the radio inspector with a statement when the ship will be in port and its radio apparatus may be thoroughly

inspected.

II. LAND STATIONS.

Coast stations.--The several classes of coast stations will be licensed, for reasons already assigned, in advance of inland stations.

Applications for licenses for coast stations should be addressed to the Department's radio inspector for the district in which the station is located, who will forward the application Form 757.

All land stations, except general and restricted amateur stations, should state their location in latitude and longitude to seconds.

The application will state the class of the station for which a license is desired, with particulars to show its proper classification, approximate transmitting range with a similar station, and precise location (State, county, city, or town, street and number, or, if outside of city or town limits, as exact a description of its locality as may be). A blank form for apparatus will be sent when Form 757 has been filed, and arrangements made for inspection if necessary. Requests for licenses for coast stations will be taken up in the order of classes, as indicated above, and in the order of date received only so far as the relative importance of stations will permit. Amateur applicants who state that they have read the International Radiotelegraphic Convention in force and the act of August 13, 1912, will receive attention before those who have not.

Inland stations.--The issue of licenses to inland stations, as already defined, will be taken up after ship and coast stations. The procedure for application for license will be the same as for coast stations.

III. FORMS.

(*a*) The several forms of applications and licenses for operators will be issued through examining officers (through the War and Navy Departments) and radio inspectors. The licenses will be numbered serially.

(*b*) The forms and licenses for stations and apparatus will be issued through radio inspectors. Licenses for general and restricted amateur stations are issued by them direct to applicant. Station licenses of all other classes are issued from the office of the Commissioner of Navigation, Department of Commerce.

IV. COMMERCIAL OPERATORS.

Applications for operators' licenses of the several commercial grades should be addressed to the nearest examining officer or radio inspector, who will arrange for examinations. Where the applicant is not within reasonable distance of an examining officer or radio inspector he may forward his application with a statement of the facts.

Commercial licenses can only be obtained by examination. Where applicants are at remote points or can not proceed to examining offices efforts will be made to examine them through radio inspectors when they are in that vicinity, but special trips can not be made for that purpose.

V. AMATEUR OPERATORS.

(*a*) Amateurs in the seaboard States should write to the nearest examining officer in their vicinity for Form 756 (application for operator's license) and to the radio inspector in their vicinity for Form 757 (application for license for land station). If the application for operator's license is also made to the radio inspector, both applications should be forwarded in the same envelope.

(*b*) Amateurs operators at points remote from examining officers and radio inspectors will be issued second-grade amateur licenses without examination, as explained previously. Examinations for first-grade licenses will be given by the radio inspector when he is in that vicinity, but special trips can not be made for this purpose.

Part 4. GENERAL OBSERVATIONS.

1. An operator's license may be granted to any person without regard to sex, nationality, or age if the applicant can fulfill the requirements for the class of license desired.

2. No stated experience is required. The examinations for the different grades are such as to require a proper amount of experience to pass.

3. The service regulations of the radiotelegraphic convention in force provides that "no station on shipboard shall be established or worked by private enterprise without authority from the Government to which the vessel is subject." Such authority shall be in the nature of a license issued by said Government. Stations on foreign ships will be licensed by their Governments, respectively. Inspectors will report to the Commissioner of Navigation on foreign ships not so licensed.

4. The list of land and ship stations of the United States, including amateurs, giving call letters, wave lengths, nature of service, etc., can be procured from the Superintendent of Documents, Government Printing Office, Washington, D. C., upon prepayment of 15 cents.

The International List of Radio Stations of the World can be procured from the International Bureau of the Telegraphic Union (Radiotelegraphic Service), Berne, Switzerland. The price is 60 cents per copy, not including postage. The rates of postage are as follows: One copy, 24 cents; two copies, 32 cents; three or four copies, 48 cents. A subscription of 80 cents additional procures

all supplements, postpaid, as issued from time to time until the next International List is published in the autumn of 1914. The stations of the United States are published in the first supplement.

Applications for the International List of Call Letters (stations of the world) should be addressed to the International Bureau at Berne. The price is 36 cents per copy, including postage. A subscription of 80 cents additional procures all supplements, postpaid, as issued until July, 1916. Remittances to Berne should be made in the form of postal money orders.

5. Operator's licenses should be framed and posted in the radio room, and licenses for stations should be accessible at all times to inspectors.

6. Operator's licenses should indicate on their face that the oath has been executed. This statement should be signed by a notary public.

7. Stations equipped to receive only do not require a license.

8. No fees are charged for any operator or station license.

9. Licensed stations require licensed operators.

10. Amateur stations within 5 miles of naval or military stations need not have been in actual operation on or before August 13, 1912, to obtain a license for a restricted amateur station.

11. Any person applying for a duplicate license to replace an original which has been lost, mutilated, or destroyed will be required to submit an affidavit to the Bureau of Navigation through the radio inspector or examining officer issuing the original, attesting the facts regarding the manner in which the original was lost, mutilated, or destroyed.

The Commissioner of Navigation will consider the facts in the case and advise the radio inspector or examining officer in regard to the issue of a duplicate license. A duplicate license will be issued under the same serial number as the original and will be marked "Duplicate" in red across the face.

12. These instructions may be amended and supplemented from time to time.

E. T. CHAMBERLAIN,
Commissioner of Navigation.

Approved:
EDWIN F. SWEET,
Assistant Secretary.

ADDITIONAL COPIES of this publication may be procured from the SUPERINTENDENT OF DOCUMENTS, Government Printing Office, Washington, D. C., at 5 cents per copy

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- United States Early Radio History

Radio Call Letters, May 9, 1913.

RADIO CALL LETTERS

DEPARTMENT OF COMMERCE

OFFICE OF THE SECRETARY

WASHINGTON

BUREAU OF NAVIGATION

This is an HTML version of the original government document, *Radio Call Letters* [C11.2:R11^5], which reported United States radio station call letter policies, as of May 9, 1913.
This HTML version is based on a photocopy of the original 4-page publication. It incorporates all of the original contents, keeping as much as possible the layout of the original document.

MAY 9, 1913.

The following instructions concerning radio call letters are issued for the information of those concerned, pending the issue of the Lists of Radio Stations of the World and of the United States, which will not be published before July.

1. Section 7 of the Act of August 13, 1912, to regulate radio communication provides:

> SEC. 7. That a person, company, or corporation within the jurisdiction of the United States shall not knowingly utter or transmit, or cause to be uttered or transmitted, any false or fraudulent distress signal or call or false or fraudulent signal, call, or other radiogram of any kind. The penalty for so uttering or transmitting a false or fraudulent distress signal or call shall be a fine of not more than two thousand five hundred dollars or imprisonment for not more than five years, or both, in the discretion of the court, for each and every such offense, and the penalty for so uttering or transmitting, or causing to be uttered or transmitted, any other false or fraudulent signal, call, or other radiogram shall be a fine of not more than one thousand dollars or imprisonment for not more than two years, or both, in the discretion of the court, for each and every such offense.

2. The Service Regulations of the Berlin and London Radiotelegraphic Conventions provide that the call letters of stations in the international system must each be formed of a group of three letters which shall be distinguishable from one another. The London International Radiotelegraphic Conference made a partial allotment of call letters among nations which signed the convention and the International Bureau at Berne, with the consent of such nations, has modified and added to this assignment of call letters by circular of April 23, 1913. The distribution of call letters among nations thus authorized is printed below for the guidance of operators of all stations, ship and shore, of the United States.

A..............All to Germany and protectorates.
B..............All to Great Britain.
CAA to CMZ..Not yet assigned.
CNA to CNZ..Morocco.
COA to CPZ...Chile.
CQA to CQZ...Monaco.
CRA to CTZ...Portugal and colonies.
CUA to CUZ..Not yet assigned.
CVA to CVZ...Roumania.
CWA to CWZ..Uruguay.
CXA to CZZ...Not yet assigned.
D..............All to Germany and protectorates.
EAA to EGZ..Spain and colonies.
EHA to EZZ..Not yet assigned.
F..............All to France and colonies.
G..............All to Great Britain.
HAA to HFZ..Austria-Hungary and Bosnia-Hertzegovina.
HGA to HHZ..Siam.
HIA to HZZ..Not yet assigned.
I..............All to Italy and colonies.
J..............All to Japan and possessions.
KAA to KCZ..Germany and protectorates.
KDA to KZZ..United States.
LAA to LHZ..Norway.
LIA to LRZ...Argentine Republic.
LSA to LWZ..Not yet assigned.
LXA to LZZ..Bulgaria.
M..............All to Great Britain.
N..............All to the United States.
OAA to OFZ..Not yet assigned.
OGA to OMZ..Austria-Hungary and Bosnia-Hertzegovina.
ONA to OTZ..Belgium and colonies.
OUA to OZZ..Denmark.
PAA to PIZ...Netherlands.
PJA to PJM...Curacao (Dutch)
PJN to PJZ...Surinam (Dutch)
PKA to PMZ..Dutch East Indies.
PNA to PZZ..Not yet assigned.
Q..............Reserved for code abbreviations.
R..............All to Russia.
SAA to SMZ...Sweden.
SNA to STZ...Brazil.
SUA to SUZ...Egypt.
SVA to SZZ...Greece.
TAA to TMZ..Turkey.
TNA to TZZ..Not yet assigned.
UAA to UMZ..France and colonies.
UNA to UZZ..Austria-Hungary and Bosnia-Hertzegovina.
VAA to VGZ..Canada (British)
VHA to VKZ..Australian Federation (British)
VLA to VMZ..New Zealand (British)
VNA to VNZ..South African Union (British)
VOA to VOZ..Newfoundland (British)
VPA to VSZ..British colonies not autonomous.
VTA to VWZ..British India.
VXA to VZZ..Not yet assigned.
W..............All to the United States.
XAA to XCZ..Mexico.
XDA to XZZ..Not yet assigned.
YAA to YZZ..Not yet assigned.
ZAA to ZZZ...Not yet assigned.

PUBLIC-SERVICE STATIONS.

3. The call letters assigned to the United States are all combinations (676) beginning with the letter N and all (676) beginning with the letter W, and all combinations (598) from KDA to KZZ, inclusive. The total number of international calls is thus 1,950, and these are reserved for Government stations and stations open to public and limited commercial service.

(*a*) All combinations beginning with the letter N are reserved for Government stations and in addition the combinations from WUA to WVZ and WXA to WZZ are reserved for the stations of the Army of the United States.

(*b*) The combinations KDA to KZZ, with a few exceptions, are reserved for ship and coast stations on the Atlantic coast and Gulf of Mexico.

(*c*) The combinations beginning with W (except WUA to WVZ and WXA to WZZ as already indicated) are reserved, with a few exceptions, for ship and coast stations on the Pacific coast and the Great Lakes.

AMATEUR STATIONS.

4. The call letters for amateur stations in the United States will be awarded by radio inspectors, each for his own district, respectively according to the following system:

(*a*) The call will consist of three items; number of radio district; followed by two letters of the alphabet. Thus, the call of all amateur stations in New England (which comprises the first district) will be the figure "one" in Continental Morse, followed by two letters; in California (in the sixth district) the figure "six" followed by two letters; in South Carolina the figure "four" followed by two letters; in Missouri the figure "nine" followed by two letters, etc. The letters X, Y, Z, must not be used as the first of the two letters.

The territory of each district is as follows:

1. Boston, Mass...Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut.
2. New York, N. Y...New York (county of New York, Staten Island, Long Island, and counties on the Hudson River to and including Albany, Rensselaer, and Schenectady) and New Jersey (counties of Bergen, Passaic, Essex, Union, Middlesex, Monmouth, Hudson, and Ocean)
3. Baltimore, Md...New Jersey (all counties not included in second district), Pennsylvania (counties of Philadelphia,

Delaware, all counties south of the Blue Mountains, and Franklin County), Delaware, Maryland, Virginia, District of Columbia.

4. Savannah, Ga...North Carolina, South Carolina, Georgia, Florida, Porto Rico.
5. New Orleans, La...Alabama, Mississippi, Louisiana, Texas, Tennessee, Arkansas, Oklahoma, New Mexico.
6. San Francisco, Cal...California, Hawaii, Nevada, Utah, Arizona.
7. Seattle, Wash...Oregon, Washington, Alaska, Idaho, Montana, Wyoming.
8. Cleveland, Ohio...New York (all counties not included in the second district), Pennsylvania (all counties not included in the third district), West Virginia, Ohio, Michigan (Lower Peninsula)
9. Chicago, Ill...Indiana, Illinois, Wisconsin, Michigan (Upper Peninsula), Minnesota, Kentucky, Missouri, Kansas, Colorado, Iowa, Nebraska, South Dakota, North Dakota.

(*b*) The three items; a given figure first, followed by two letters of the alphabet, thus may be combined in 598 different calls, which will probably suffice for the amateur sending stations in most districts for some time to come.

(*c*) Radio inspectors will insert amateur station calls in station licenses according to this system, and will keep a permanent chart, of 598 squares, lettered with the alphabet from left to right and from top to bottom (A to W), inserting in the appropriate square the serial license number of the station to which the call letters were awarded. Within these limitations radio inspectors will use their discretion in the award of calls, avoiding, of course, duplications.

(*d*) When a station is abandoned and the license canceled, or if a license shall be forfeited for violation of law, the call assigned to it may be allotted to another station.

(*e*) If the entire 598 calls have been exhausted, radio inspectors will issue additional calls, consisting of the figure of the district followed by three letters. From such combinations should be excluded the combination SOS, and PRB, all three-letter combinations beginning with QR or QS, all combinations involving the repetition of the same letter three times, three-letter combinations beginning with K, N, W, X, Y, Z, and other combinations, which, for various reasons, international, national, local, or individual, may be objectionable. With such exclusions, over 10,000 calls will remain for each district.

LIMITED COMMERCIAL STATIONS.

5. Calls for limited commercial land stations will be allotted by the Bureau of Navigation in a special manner to indicate, if practical, the different radio districts over which such stations usually radiate messages, as well as to identify the stations.

SPECIAL CLASSES OF STATIONS.

6. Calls for special classes of stations, such as experiment stations for the development of radio communication, technical and training school stations, and special amateur stations will be allotted by the Bureau of Navigation.

The call will consist of three items, the number of the radio district, followed by two letters of the alphabet. The first letter will be: X, for experiment stations; Y, technical and training schools; Z, special amateur stations.

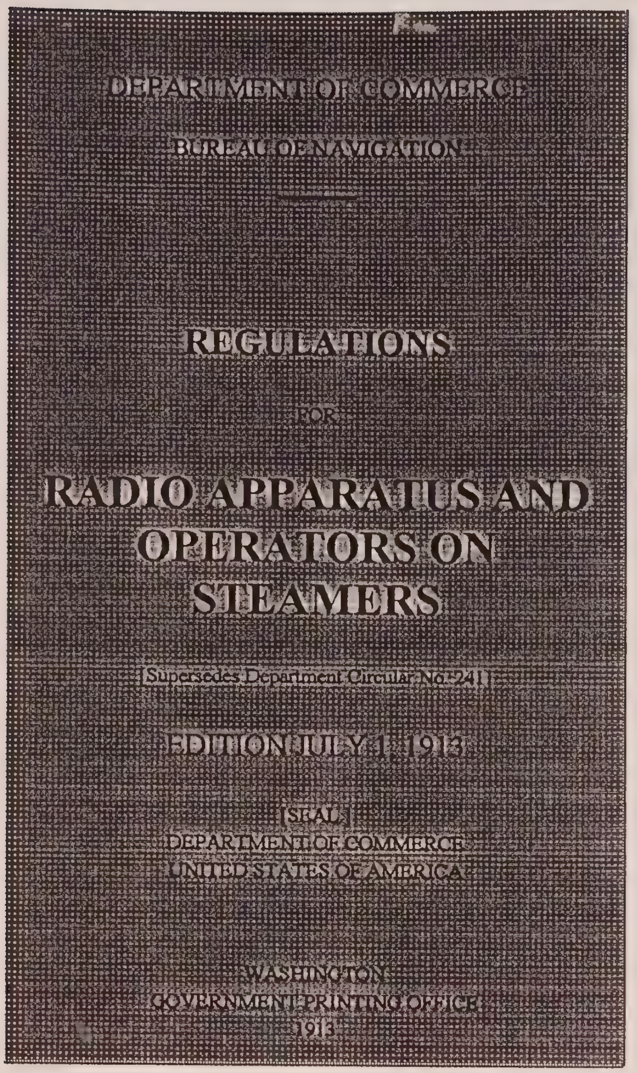
Twenty-six different combinations for each class in each district, of course, are possible. If more should prove necessary for any class in any district, a third letter will be added to the call.

E. T. Chamberlain,
Commissioner of Navigation.

Approved:
Edwin F. Sweet,
Assistant Secretary.

- United States Early Radio History

Regulations for Radio Apparatus and Operators on Steamers, July 1, 1913.



DEPARTMENT OF COMMERCE
BUREAU OF NAVIGATION

REGULATIONS
FOR
RADIO APPARATUS AND OPERATORS ON STEAMERS

[Supersedes Department Circular No. 241]

EDITION JULY 1, 1913

[SEAL.]
DEPARTMENT OF COMMERCE
UNITED STATES OF AMERICA

WASHINGTON
GOVERNMENT PRINTING OFFICE
1913

This is an HTML version of the original government document, *Regulations for Radio Apparatus and Operators on Steamers*, which reported United States radio regulations for vessels, current at the time of publication.

This HTML version is based on a photocopy of the original 10-page publication. It incorporates all of the original contents (except for some minor elements, such as page number references), keeping as much as possible the layout of the original document.

REGULATIONS FOR RADIO APPARATUS AND OPERATORS ON STEAMERS.

DEPARTMENT OF COMMERCE,
OFFICE OF THE SECRETARY,
Washington, July 1, 1913.

To collectors of customs, radio inspectors, and others concerned:

Your attention is invited to the following act approved July 23, 1912, which amends section 1 of the act approved June 24, 1910.

AN ACT To amend an act entitled "An Act to require apparatus and operators for radio communication on certain ocean steamers," approved June twenty-fourth, nine hundred and ten.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, * * *

"SECTION 1. That from and after October first, nineteen hundred and twelve, it shall be unlawful for any steamer of the United States or of any foreign country navigating the ocean or the Great Lakes and licensed to carry, or carrying, fifty or more persons, including passengers or crew or both, to leave or attempt to leave any port of the United States unless such steamer shall be equipped with an efficient apparatus for radio communication, in good working order, capable of transmitting and receiving messages over a distance of at least one hundred miles, day or night. An auxiliary power supply, independent of the vessel's main electric power plant, must be provided which will enable the sending set for at least four hours to send messages over a distance of at least one hundred miles, day or night, and efficient communication between the operator in the radio room and the bridge shall be maintained at all times.

"The radio equipment must be in charge of two or more persons skilled in the use of such apparatus, one or the other of whom shall be on duty at all times while the vessel is being navigated. Such equipment, operators, the regulation of their watches, and the transmission and receipt of messages, except as may be regulated by law or international agreement, shall be under the control of the master, in the case of a vessel of the United States; and every willful failure on the part of the master to enforce at sea the provisions of this paragraph as to equipment, operators, and watches shall subject him to a penalty of one hundred dollars.

"That the provisions of this section shall not apply to steamers plying between ports, or places, less than two hundred miles apart."

SEC. 2. That this Act, so far as it relates to the Great Lakes, shall take effect on and after April first, nineteen hundred and thirteen, and so far as it relates to ocean cargo steamers shall take effect on and after July first, nineteen hundred and thirteen: *Provided,* That on cargo steamers, in lieu of the second operator provided for in this Act, there may be substituted a member of the crew or other person who shall be duly certified and entered in the ship's log as competent to receive and understand distress calls or other usual calls indicating danger, and to aid in maintaining a constant wireless watch so far as required for the safety of life.

The remaining sections of the act of June 24, 1910, which are unchanged, read as follows:

SEC. 2. That for the purpose of this Act apparatus for radio communication shall not be deemed to be efficient unless the company installing it shall contract in writing to exchange, and shall, in fact, exchange, as far as may be physically practicable, to be determined by the master of the vessel, messages with shore or ship stations using other systems of radio communication.

SEC. 3. That the master or other person being in charge of any such vessel which leaves or attempts to leave any port of the United States in violation of any of the provisions of this Act shall, upon conviction, be fined in a sum not more than five thousand dollars, and any such fine shall be a lien upon such vessel, and such vessel may be libeled therefor in any district court of the United States within the jurisdiction of which such vessel shall arrive or depart, and the leaving or attempting to leave each and every port of the United States shall constitute a separate offense.

SEC. 4. That the Secretary of Commerce shall make such regulations as may be necessary to secure the proper execution of this Act by collectors of customs and other officers of the Government.

REGULATIONS.

I. ADMINISTRATION.

1. The Department has established, for the purpose of enforcing, through radio inspectors and others, the acts relating to radio communication and the International Convention, the following districts, with the principal office for each district at the customhouse of the port named:

1. BOSTON, MASS---Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut.
2. NEW YORK, N. Y---New York (county of New York, Staten Island, Long Island, and counties on the Hudson River to and including Schenectady, Albany, and Rensselaer) and New Jersey (counties of Bergen, Passaic, Essex, Union, Middlesex, Monmouth, Hudson and Ocean).
3. BALTIMORE, MD---New Jersey (all counties not included in second district), Pennsylvania (counties of Philadelphia, Delaware, all counties south of the Blue Mountains, and Franklin County); Delaware, Maryland, Virginia, District of Columbia.
4. SAVANNAH, GA---North Carolina, South Carolina, Georgia, Florida, Porto Rico.
5. NEW ORLEANS, LA---Alabama, Mississippi, Louisiana, Texas, Tennessee, Arkansas, Oklahoma, New Mexico.
6. SAN FRANCISCO, CALIF--- California, Hawaii, Nevada, Utah, Arizona.
7. SEATTLE, WASH---Oregon, Washington, Alaska, Idaho, Montana, Wyoming.
8. CLEVELAND, OHIO---New York (all counties not included in second district), Pennsylvania (all counties not included in third district), West Virginia, Ohio, Michigan (Lower Peninsula).
9. CHICAGO, ILL---Indiana, Illinois, Wisconsin, Michigan (Upper Peninsula), Minnesota, Kentucky, Missouri, Kansas, Colorado, Iowa, Nebraska, South Dakota, North Dakota.

2. Radio inspectors are authorized to communicate directly in their respective districts with collectors of customs, and to cooperate with them in the enforcement of the laws.

3. The radio inspectors and customs officers, as far as practicable, shall visit steamers subject to the act before they leave port, and ascertain if they are equipped with the apparatus in charge of the operators prescribed by the act.

4. Where a steamer subject to the act is without the apparatus and the operators prescribed, or either of them, and is about to attempt to leave port, the radio inspector or customs officer visiting the vessel shall--

(*a*) Notify the master of the fine to which he will be liable, and of the particulars in respect of which the law has not been complied with;

(*b*) Notify at once the collector of customs, if necessary, by telephone;

(*c*) The radio inspector or customs officer shall submit to the collector of customs of the port a written report stating the exact nature of the violation, the section of the law violated, and the penalties involved and all of the circumstances in connection therewith which will be of service to the collector and to the Secretary of Commerce in determining what action shall be taken;

(*d*) Statements should be obtained from operators, ship officers, or other witnesses at the time the violation is discovered and should accompany the report to the collector of customs;

(*e*) The collector of customs will report the case to the Secretary of Commerce in the usual manner as a navigation fine case.

5. The act does not authorize the refusal of clearance in case of violation of its provisions, but specifically provides for the imposition of a fine in a sum not more than $5,000.

6. The act does not apply to a vessel at the time of entering a port of the United States. Radio inspectors and customs officers may, however, accept as evidence of the efficiency of the apparatus and the skill of an operator messages shown to have been transmitted and received by him over a distance of at least 100 miles, by day, during the voyage to the United States.

7. Collectors of customs and radio inspectors are enjoined that the reports required by paragraph 4 (*c*) of these regulations must be precise statements of the facts as the basis for possible proceedings by the United States attorney.

8. Violations by the master of a vessel of the United States of the provisions of the second paragraph of section 1 will be reported to the collector of customs directly and the usual procedure in cases of fines and penalties will be followed.

II. OPERATORS.

1. In so far as licensed operators are concerned a sharp distinction should be drawn between the act of July 23, 1912, which requires apparatus and operators for radio communication on steamers, and the act of August 13, 1912, to regulate radio communication.

The act of July 23, 1912, amending the act of June 24, 1910, is designed to promote safety at sea through the employment of apparatus and operators to transmit and receive distress calls and other calls relating to perils and aids to navigation. It provides that in the case of American and foreign vessels subject to its provisions "the radio equipment must be in charge of two or more persons skilled in the use of such apparatus." This act does not require that the operators shall be licensed, and the penalty prescribed in section 3 of the act is not incurred by the master of a vessel whose operators are "skilled in the use of such apparatus," even though they may not be licensed.

The act of August 13, 1912, is designed to execute in behalf of the United States the International Radiotelegraphic Convention and thus to promote orderly exchanges by radio communication. For this purpose the International Radiotelegraphic Convention (Service Regulations) provides that the service of the station on shipboard shall be carried on by a telegraph operator holding a certificate issued by the Government to which the vessel is subject.

Section 3 of the act of August 13, 1912, carries out this provision of the International Convention by providing licenses for operators on American vessels. If an unlicensed person serves in charge or in supervision of the use and operation of the apparatus both he and his employer are liable to a fine of not more than $100 or imprisonment for not more than two months or both. This section and penalty do not apply to operators on foreign ships. But operators on the ships of foreign nations signatory to the International Radiotelegraphic Convention, as shown above, are required to have certificates or licenses from their own governments, and if not so certificated, the obligations of the convention have not been observed. The convention in the Service Regulations provides for this situation.

The act of July 23, 1912, as stated, requires that on American and foreign ships the operators must be "skilled in the use of such apparatus," but does not require that they must be licensed. To facilitate commerce and simplify administration, operators presenting American licenses or foreign certificates are accepted as "skilled in the use of such apparatus," except where there may be special reasons to doubt the operator's skill or reliability. Where operators on American or foreign ships do not have such licenses or foreign certificates, radio inspectors or customs officers under the act of July 23, 1912, may accept other competent evidence of skill or may examine such operators.

2. The Service Regulations of the International Convention require that--

The service of the station on shipboard shall be carried on by a telegraph operator holding a certificate issued by the Government to which the vessel is subject.

Such certificate shall attest the professional efficiency of the operator as regards--

(*a*) Adjustment of the apparatus and knowledge of its functioning.

(*b*) Transmission and acoustic reception at the rate of not less than 20 words a minute (Continental Morse) for commercial first-grade operators and not less than 12 words per minute for second-grade operators.

(*c*) Knowledge of the regulations governing the exchange of wireless telegraph correspondence.

(*d*) The certificate shall furthermore state that the Government has bound the operator to secrecy with regard to the correspondence.

3. The International Convention has been ratified by the principal maritime nations, dominions, and provinces. Radio operators holding valid certificates issued by foreign Governments which are parties to the convention will be recognized by this department as persons "skilled in the use of such apparatus" within the meaning of the act unless in the case of a specific individual there may be special reason to doubt the operator's skill and reliability. Such certificates should be ready at hand for the inspection of radio inspectors or customs officers before the steamer departs from the United States.

4. In the case of a vessel subject to the act under the flag of any nation not a party to the International Convention, the radio operator, before the departure of the vessel from the United States, must furnish to the inspector evidence that he is "skilled in the use of the apparatus." This evidence shall consist of an examination on board by the radio inspector.

5. The Department of Commerce issues licenses to radio operators certifying the degree of knowledge of radio telegraphy possessed by them and their ability as operators, under the International Convention. Examinations for operators' licenses can be taken at the following points: The United States Navy Yards at Boston, Mass., Brooklyn, N. Y., Philadelphia, Pa., Washington, D. C., Norfolk, Va., Charleston, S. C., New Orleans, La., Mare Island (San Francisco), Cal., Puget Sound, Wash.; at the naval stations at Key West, Fla., San Juan, P. R., and Honolulu, Hawaii; at the Naval Academy, Annapolis Md., and the United States Naval Radio Station at Colon, Republic of Panama; also at Fort Sam Houston, San Antonio, Tex., Fort Wood, New York Harbor, Fort Omaha, Nebr., Fort Leavenworth, Kans.; Fort Mason, San Francisco, Cal.; School for Enlisted Specialists, Fort Monroe, Va.; at the Army stations at St. Michael and Fairbanks; and by special arrangement at the Army stations at Fort Gibbon and Valdez, Alaska; also at the Bureau of Standards, Washington, D. C.; and by the Department's radio inspectors at the customhouses in their districts and elsewhere, if practicable, by arrangement with them.

Applicants for licenses should communicate in advance with the commandants or commanding officers of the navy yards or Army posts or Naval or Army stations named, or with the Director of the Bureau of Standards, or with the radio inspectors at the customhouses in regard to examinations. In emergencies arrangements for the examination of ship operators can be made on short notice with the naval stations or radio inspectors in different ports. An effort should be made to arrange beforehand for any desired examination.

The operators' licenses will be delivered to the successful applicants at the time of examination, or as soon thereafter as

possible. The operator's license is not valid until the oath has been accomplished.

The license provides that the holder shall take the oath for the preservation of the secrecy of messages before a notary public or other officer authorized to administer oaths.

6. The requirements which applicants must meet to secure licenses of the several grades and scope and limitations of employment authorized by the licenses of the several grades are as follows:

Commercial first grade.--The applicant must pass a satisfactory examination in--

(*a*) The adjustment, operation, and care of the apparatus, including correction of faults and change from one wave to another.

(*b*) Transmitting and receiving by ear at a speed of not less than 20 words a minute in Continental Morse Code (five letters to the word).

(*c*) Use and care of storage battery or other auxiliary power apparatus.

(*d*) Knowledge of the international regulations applying to radio communication in force.

(*e*) Knowledge of requirements of the acts of Congress to regulate radio communication.

Commercial second grade.--The applicant must pass a satisfactory examination in all the subjects prescribed above for the first grade, with the exception that the minimum speed in transmitting and receiving shall be not less than 12 words in Continental Morse Code and the examination in the subjects will not be as comprehensive as that given first-grade operators.

Commercial cargo grade.--The examination should be conducted so as to determine the following facts:

(1) That the applicant is sufficiently familiar with the Continental Morse Code to recognize the distress signal (SOS) when included in a list of other words or signals sent slowly (approximately five words a minute).

(2) That the applicant is sufficiently familiar with the Continental Morse Code to recognize the radio call letters of the vessel on which he desires to operate, when sent slowly and repeated several times.

(3) That the applicant is sufficiently familiar with the type of receiving apparatus of the vessel on which he desires to operate to determine by a buzzer or similar test that the detector or receiving apparatus is properly adjusted to receive signals.

Amateur first grade.--The applicant must have a sufficient knowledge of the adjustment and operation of the apparatus *which he wishes to operate*, and of the regulations of the International Convention and acts of Congress in so far as they relate to interference with other radio communication, and impose certain duties on all grades of operators. The applicant must be able to transmit and receive in Continental Morse at a speed sufficient to enable him to recognize distress calls or the official "Keep out" signals. A speed of at least five words per minute must be attained (five letters to the word).

7. Ship stations on vessels of the United States are classed under the act of August 13, 1912, as follows:

Class A.--Ocean passenger steamers which are required to carry at least two operators and maintain a constant skilled watch. On vessels of this class carrying or licensed to carry less than 100 passengers one operator should hold the commercial first-grade license and the other may hold a second-grade license. Vessels of this class carrying or licensed to carry 100 or more passengers and under the London Convention vessels having constant service should have at least two operators, each holding commercial first-grade licenses.

Class B.--Cargo steamers which have crews of 50 or more are required to carry two operators, one holding a second-grade commercial license or higher; the second may be a member of the crew holding a cargo or amateur first-grade operator's license, requiring a transmitting and receiving ability of at least five words per minute. Vessels of this class maintain a constant receiving watch, but the transmitting service may be during limited hours as required by the vessel.

Class C.--Vessels of this class are those voluntarily equipped with radio apparatus and not subject to the act quoted herein. The vessels have no fixed hours of service, but should be provided with at least one operator holding a commercial first or second grade license.

The following-named vessels come in this class:

(1) Passenger steamers where the licensed capacity and number of crew combined number less than 50.

(2) Cargo steamers with crews less than 50.

(3) Tugs and towing steamers, etc., with crews less than 50.

(4) Motor vessels.

(5) Sailing vessels and barges.

(6) Yachts.

(7) Steamers of any kind plying between ports or places less than 200 miles apart.

8. An operator's license may be granted to any person without regard to sex, nationality, or age if the applicant can fulfill the requirements for the class of license desired. Although no stated experience is required, the examinations for the different grades are such as requires a proper amount of experience to pass.

9. *Temporary permits*.--Section 3 of the act of August 13, 1912, provides:

> In case of emergency the Secretary of Commerce may authorize a collector of customs to issue a temporary permit, in lieu of a license, to the operator on a vessel subject to the radio ship act of June twenty-fourth, nineteen hundred and ten.

The permits should be issued only to persons who the collector of customs has reason to believe are skilled in the use of the apparatus, but have not had the opportunity to present themselves for examination before Government officers authorized to conduct examinations and furnish licenses. The temporary permit is valid for one trip only. The collector of customs will forward to the Department of Commerce (Bureau of Navigation) a report covering each temporary permit issued and the reasons for its issue.

III. APPARATUS.

1. When the radio apparatus is certified as complying with the requirements of law by the competent authorities of a foreign Government, such certificate will be recognized by this Department, but the radio inspector or customs officer may, if he deem it necessary or desirable, satisfy himself that the apparatus is in good working order.

2. Whenever practicable the radio inspector shall satisfy himself on his visit before the departure of a steamer subject to the act that the apparatus is efficient and in good working order within the meaning of the act, and if satisfied he shall issue a certificate in the form in Appendix A. The duplicate of these certificates should be filed with the collector of customs as a record of the radio equipment on vessels sailing from his port.

3. When inspection of the apparatus by a radio inspector or customs officer is not practicable the master of the steamer may furnish to the visiting customs officer a certificate in the form in Appendix B. Such certificate shall be retained in the files of the collector of customs.

Whenever the radio inspector is absent from his home port, he will notify the collector of customs, who will arrange for the collection of certificates and survey of equipment.

4. The current necessary to transmit and receive messages shall at all times while the steamer is under way be available for the radio operator's use.

5. An auxiliary power supply, independent of the vessels main electric power plant, must be provided which will enable messages to be sent for at least four hours over a distance of at least 100 miles day or night.

Storage battery sets of sufficient voltage and capacity to operate the regular motor generator or source of primary alternating current are recommended. A complete separate auxiliary set comprising power source and wireless equipment may be provided if the required results are obtained.

Any auxiliary engine for wireless purposes must operate on a fuel which will fulfill the requirements of Rule XI, section 5, of the General Rules and Regulations of the Steamboat-Inspection Service, reading as follows:

> None of the inflammable articles specified in section 4472, Revised Statutes, or oil that will not stand a fire test of 300° F. shall be used as stores on any pleasure steamer or steamer carrying passengers except that vessels not carrying passengers for hire may transport gasoline or any of the products of petroleum for use as a source of motive power for motor boats or launches of such vessels. (Sec 4472, R. S.)

6. Efficient communication between the radio room and the bridge must be maintained. A speaking tube or telephone will comply with this requirement. A bell and messenger service will not be acceptable unless there are special conditions justifying the equipment. The speaking tube or telephone must terminate in the radio room and on the bridge, or in the chart room if readily accessible from the bridge. If the radio room is adjacent to or accessible from the bridge so that orders may be transferred direct, no means of communication will be required. Any arrangement calling for the services of a third person to transmit the message will not be satisfactory. The radio inspectors will notify the ship authorities whether the means of communication provided is satisfactory at the time of inspection.

7. One extra pair of head telephones, extra cords, and extra detectors should always be kept on hand.

8. A storage battery voltmeter, hydrometer, a supply of electrolyte, and distilled water should be a part of the regular equipment, but are not prescribed in terms by statute. The absence of these and similar inexpensive emergency articles will be brought to the attention of the master and of the company installing the apparatus by the radio inspector, in writing, and if after a reasonable interval they have not been supplied, the inspector will communicate the fact to the Commissioner of Navigation.

IV. CONSTANT WATCH.

On vessels of the United States it is the statutory duty of the master to see that one operator is on duty at all times. The radio service of the ship is under the supreme authority of the master.

V. MISCELLANEOUS.

1. The amended act applies to vessels licensed to carry as well as those actually carrying 50 or more persons, etc.
2. Distances under the act are to be computed in nautical miles.

VI. ADDITIONS OR AMENDMENTS.

Additional or amendatory regulations will be issued from time to time as they may appear necessary.

E. T. CHAMBERLAIN,
Commissioner of Navigation.

Approved:
EDWIN F. SWEET,
Assistant Secretary.

APPENDIX A.--*Radio Service Form 752.*

CERTIFICATE OF RADIO INSPECTION.

PORT OF _______ _______,
_______ _______, 191__.

This is to certify that I have to-day examined the apparatus for radio communication on the S.S. ______, of which ______ ______ is the master, about to leave this port for ______, and I have found the same efficient and in good working order, as prescribed by the act of June 24, 1910, as amended by the act of July 23, 1912.

(Signed) ______ ______,
Radio Inspector.
(Or) ______ ______,
Customs Inspector.

APPENDIX B.–*Radio Service Form 753.*

MASTER'S CERTIFICATE OF RADIO APPARATUS.

NOTICE.

The radio equipment must be in charge of two or more persons skilled in the use of such apparatus, one or the other of whom shall be on duty at all times while the vessel is being navigated. Such equipment, operators, the regulation of their watches, and the transmission and receipt of messages, except as may be required by law or international agreement, shall be under the control of the master, in the case of a vessel of the United States; and every willful failure on the part of the master to enforce at sea the provisions of this paragraph as to equipment, operators, and watches shall subject him to a penalty of one hundred dollars. (Act of July 23, 1912)

PORT OF _______ _______,
_______ _______, 191__.

This is to certify that I have to-day examined the apparatus for radio communication on the S.S. ______, of which I am the master, about to leave this port for ______, and I have found the same efficient and in good working order, as prescribed by the act of June 24, 1910, as amended by the act of July 23, 1912.

(Signed) ______ ______, *Master.*

ADDITIONAL COPIES of this publication may be procured from the SUPERINTENDENT OF DOCUMENTS, Government Printing Office, Washington, D. C., at 5 cents per copy

- United States Early Radio History

Radio Communication Laws of the United States, July 27, 1914.

This is an HTML version of the original government document [C11.7/6:1914], which contained the major International agreements, plus United States radio laws and regulations, current at the time of publication. (Subsequent changes to these regulations were reported in the *Radio Service Bulletin*.)

This version is based on a photocopy of the original 100-page publication. It incorporates all of the original contents (except for some minor details, such as page numbers), keeping as much as possible the layout of the original document.

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DEPARTMENT OF COMMERCE,
BUREAU OF NAVIGATION,
Washington, D. C., July 27, 1914.

To collectors of customs, radio inspectors, and others concerned:

This publication is issued for the guidance and instruction of United States officers engaged in and concerned with the enforcement of radio laws and for the information of all owners and operators of apparatus for radio communication.

In this issue are printed the act of June 24, 1910, as amended July 23, 1912, "An act to require apparatus and operators for radio communication on certain steamers"; the act of August 13, 1912, "An act to regulate radio communication"; the International Radiotelegraphic Convention; regulations made pursuant to the above mentioned acts, and general information. This edition supersedes Department Circular No. 241, "Regulations for radio apparatus and operators on steamers"; "Regulations governing radio communication," and all general letters concerning the wireless communication laws.

The act of August 13, 1912 (Public 264), the London Radiotelegraphic Convention and the Regulations hereafter will not be printed as separate pamphlets.

The subject matter is divided into parts and each part is divided under subheadings, as shown by the table of contents. The index is at the end.

Owners and operators of radio stations and others concerned may obtain copies of this publication from the radio inspectors given in the list of districts or from the Commissioner of Navigation, Department of Commerce, Washington, D. C. Additional copies may be purchased from the Superintendent of Documents, Government Printing Office, Washington, D. C., at a nominal price.

E. T. CHAMBERLAIN,
Commissioner of Navigation.

Approved:
WILLIAM C. REDFIELD,
Secretary.

RADIO LAWS AND REGULATIONS OF THE UNITED STATES.

Part I.--RADIO COMMUNICATION LAWS AND INTERNATIONAL TREATIES.

An act approved July 23, 1912, amending section 1 of an act entitled "An Act to require apparatus and operators for radio communication on certain ocean steamers," approved June 24, 1910. [The amended act applies to vessels licensed to carry as well as those actually carrying 50 or more persons, etc.]

Ship acts.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, * * *

Auxiliary.

Operators.

Penalty.

"SECTION 1. That from and after October first, nineteen hundred and twelve, it shall be unlawful for any steamer of the United States or of any foreign country navigating the ocean or the Great Lakes and licensed to carry, or carrying, fifty or more persons, including passengers or crew or both, to leave or attempt to leave any port of the United States unless such steamer shall be equipped with an efficient apparatus for radio communication, in good working order, capable of transmitting and receiving messages over a distance of at least one hundred miles, day or night. An auxiliary power supply, independent of the vessel's main electric power plant, must be provided which will enable the sending set for at least four hours to send messages over a distance of at least one hundred miles, day or night, and efficient communication between the operator in the radio room and the bridge shall be maintained at all times.

"The radio equipment must be in charge of two or more persons skilled in the use of such apparatus, one or the other of whom shall be on duty at all times while the vessel is being navigated. Such equipment, operators, the regulation of their watches, and the transmission and receipt of messages, except as may be regulated by law or international agreement, shall be under the control of the master, in the case of a vessel of the United States; and every willful failure on the part of the master to enforce at sea the provisions of this paragraph as to equipment, operators, and watches shall subject him to a penalty of one hundred dollars.

"That the provisions of this section shall not apply to steamers plying between ports, or places, less than two hundred miles apart."

Cargo Operators.

SEC. 2. That this Act, so far as it relates to the Great Lakes, shall take effect on and after April first, nineteen hundred and thirteen, and so far as it relates to ocean cargo steamers shall take effect on and after July first, nineteen hundred and thirteen: *Provided*, That on cargo steamers, in lieu of the second operator provided for in this Act, there may be substituted a member of the crew or other person who shall be duly certified and entered in the ship's log as competent to receive and understand distress calls or other usual calls indicating danger, and to aid in maintaining a constant wireless watch so far as required for the safety of life.

The remaining sections of the act of June 24, 1910, which are unchanged, read as follows:

Intercommunication.

SEC. 2. That for the purpose of this Act apparatus for radio communication shall not be deemed to be efficient unless the company installing it shall contract in writing to exchange, and shall, in fact, exchange, as far as may be physically practicable, to be determined by the master of the vessel, messages with shore or ship stations using other systems of radio communication.

Penalty.

SEC. 3. That the master or other person being in charge of any such vessel which leaves or attempts to leave any port of the United States in violation of any of the provisions of this Act shall, upon conviction, be fined in a sum not more than five thousand dollars, and any such fine shall be a lien upon such vessel, and such vessel may be libeled therefor in any district court of the United States within the jurisdiction of which such vessel shall arrive or depart, and the leaving or attempting to leave each and every port of the United States shall constitute a separate offense.

SEC. 4. That the Secretary of Commerce shall make such regulations as may be necessary to secure the proper execution of this Act by collectors of customs and other officers of the Government.

[PUBLIC--NO. 264.]

[S. 6412.]

An Act To regulate radio communication, approved August 13, 1912.

Radio act.

License.

Penalty.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That a person, company, or corporation within the jurisdiction of the United States shall not use or operate any apparatus for radio communication as a means of commercial intercourse among the several States, or with foreign nations, or upon any vessel of the United States engaged in interstate or foreign commerce, or for the transmission of radiograms or signals the effect of which extends beyond the jurisdiction of the State or Territory in which the same are made, or where interference would be caused thereby with the receipt of messages or signals from beyond the jurisdiction of the said State or Territory, except under and in accordance with a license, revocable for cause, in that behalf granted by the Secretary of Commerce upon application therefor; but nothing in this Act shall be construed to apply to the transmission and exchange of radiograms or signals between points situated in the same State: *Provided,* That the effect thereof shall not

extend beyond the jurisdiction of the said State or interfere with the reception of radiograms or signals from beyond said jurisdiction; and a license shall not be required for the transmission or exchange of radiograms or signals by or on behalf of the Government of the United States, but every Government station on land or sea shall have special call letters designated and published in the list of radio stations of the United States by the Department of Commerce. Any person, company, or corporation that shall use or operate any apparatus for radio communication in violation of this section, or knowingly aid or abet another person, company, or corporation in so doing, shall be deemed guilty of a misdemeanor, and on conviction thereof shall be punished by a fine not exceeding five hundred dollars, and the apparatus or device so unlawfully used and operated may be adjudged forfeited to the United States.

License form.

Sec. 2. That every such license shall be in such form as the Secretary of Commerce shall determine and shall contain the restrictions, pursuant to this Act, on and subject to which the license is granted; that every such license shall be issued only to citizens of the United States or Porto Rico or to a company incorporated under the laws of some State or Territory or of the United States or Porto Rico, and shall specify the ownership and location of the station in which said apparatus shall be used and other particulars for its identification and to enable its range to be estimated; shall state the purpose of the station, and in case of a station in actual operation at the date of passage of this Act, shall contain the statement that satisfactory proof has been furnished that it was actually operating on the above-mentioned date; shall state the wave length or the wave lengths authorized for use by the station for the prevention of interference and the hours for which the station is licensed for work; and shall not be construed to authorize the use of any apparatus for radio communication in any other station than that specified. Every such license shall be subject to the regulations contained herein, and such regulations as may be established from time to time by authority of this Act or subsequent Acts and treaties of the United States. Every such license shall provide that the President of the United States in time of war or public peril or disaster may cause the closing of any station for radio communication and the removal therefrom of all radio apparatus, or may authorize the use or control of any such station or apparatus by any department of the Government, upon just compensation to the owners.

Operators.
Suspension of license.
Penalty.
Temporary permit.

Sec. 3. That every such apparatus shall at all times while in use and operation as aforesaid be in charge or under the supervision of a person or persons licensed for that purpose by the Secretary of Commerce. Every person so licensed who in the operation of any radio apparatus shall fail to observe and obey regulations contained in or made pursuant to this Act or subsequent Acts or treaties of the United States, or any one of them, or who shall fail to enforce obedience thereto by an unlicensed person while serving under his supervision, in addition to the punishments and penalties herein prescribed, may suffer the suspension of the said license for a period to be fixed by the Secretary of Commerce not exceeding one year. It shall be unlawful to employ any unlicensed person or for any unlicensed person to serve in charge or in supervision of the use and operation of such apparatus, and any person violating this provision shall be guilty of a misdemeanor, and on conviction thereof shall be punished by a fine of not more than one hundred dollars or imprisonment for not more than two months; or both, in the discretion of the court, for each and every such offense: *Provided,* That in case of emergency the Secretary of Commerce may authorize a collector of customs to issue a temporary permit, in lieu of a license, to the operator on a vessel subject to the radio ship act of June twenty-fourth, nineteen hundred and ten.

Regulations.

Sec. 4. That for the purpose of preventing or minimizing interference with communication between stations in which such apparatus is operated, to facilitate radio communication, and to further the prompt receipt of distress signals, said private and commercial stations shall be subject to the regulations of this section. These regulations shall be enforced by the Secretary of Commerce through the collectors of customs and other officers of the Government as other regulations herein provided for.

The Secretary of Commerce may, in his discretion, waive the provisions of any or all of these regulations when no interference of the character above mentioned can ensue.

Experimental stations.

The Secretary of Commerce may grant special temporary licenses to stations actually engaged in conducting experiments for the development of the science of radio communication, or the apparatus pertaining thereto, to carry on special tests, using any amount of power or any wave lengths, at such hours and under such conditions as will insure the least interference with the sending or receipt of commercial or Government radiograms, of distress signals and radiograms, or with the work of other stations.

In these regulations the naval and military stations shall be understood to be stations on land.

REGULATIONS.

NORMAL WAVE LENGTH.

First. Every station shall be required to designate a certain definite wave length as the normal sending and receiving wave length of the station. This wave length shall not exceed six hundred meters or it shall exceed one thousand six hundred meters. Every coastal station open to general public service shall at all times be ready to receive messages of such wave lengths as are required by the Berlin convention. Every ship station,

except as hereinafter provided, and every coast station open to general public service shall be prepared to use two sending wave lengths, one of three hundred meters and one of six hundred meters, as required by the international convention in force: *Provided,* That the Secretary of Commerce may, in his discretion, change the limit of wave length reservation made by regulations first and second to accord with any international agreement to which the United States is a party.

OTHER WAVE LENGTHS.

Second. In addition to the normal sending wave length all stations, except as provided hereinafter in these regulations, may use other sending wave lengths: *Provided,* That they do not exceed six hundred meters or that they do exceed one thousand six hundred meters: *Provided further,* That the character of the waves emitted conforms to the requirements of regulations third and fourth following.

USE OF A "PURE WAVE."

Third. At all stations if the sending apparatus, to be referred to hereinafter as the "transmitter," is of such a character that the energy is radiated in two or more wave lengths, more or less sharply defined, as indicated by a sensitive wave meter, the energy in no one of the lesser waves shall exceed ten per centum of that in the greatest.

USE OF A "SHARP WAVE."

Fourth. At all stations the logarithmic decrement per complete oscillation in the wave trains emitted by the transmitter shall not exceed two-tenths, except when sending distress signals or signals and messages relating thereto.

USE OF "STANDARD DISTRESS WAVE."

Fifth. Every station on shipboard shall be prepared to send distress calls on the normal wave length designated by the international convention in force, except on vessels of small tonnage unable to have plants insuring that wave length.

SIGNAL OF DISTRESS.

Sixth. The distress call used shall be the international signal of distress ● ● ● ▬ ▬ ▬ ● ● ●

USE OF "BROAD INTERFERING WAVE" FOR DISTRESS SIGNALS.

Seventh. When sending distress signals, the transmitter of a station on shipboard may be tuned in such a manner as to create a maximum of interference with a maximum of radiation.

DISTANCE REQUIREMENT FOR DISTRESS SIGNALS.

Eighth. Every station on shipboard, wherever practicable, shall be prepared to send distress signals of the character specified in regulations fifth and sixth with sufficient power to enable them to be received by day over sea a distance of one hundred nautical miles by a shipboard station equipped with apparatus for both sending and receiving equal in all essential particulars to that of the station first mentioned.

"RIGHT OF WAY" FOR DISTRESS SIGNALS.

Ninth. All stations are required to give absolute priority to signals and radiograms relating to ships in distress; to cease all sending on hearing a distress signal; and, except when engaged in answering or aiding the ship in distress, to refrain from sending until all signals and radiograms relating thereto are completed.

REDUCED POWER FOR SHIPS NEAR A GOVERNMENT STATION.

Tenth. No station on shipboard, when within fifteen nautical miles of a naval or military station, shall use a transformer input exceeding one kilowatt, nor, when within five nautical miles of such a station, a transformer input exceeding one-half kilowatt, except for sending signals of distress, or signals or radiograms relating thereto.

INTERCOMMUNICATION.

Eleventh. Each shore station open to general public service between the coast and vessels at sea shall be bound to exchange radiograms with any similar shore station and with any ship station without distinction of the radio system adopted by such stations, respectively, and each station on shipboard shall be bound to exchange radiograms with any other station on shipboard without distinction of the radio systems adopted by each station, respectively.

It shall be the duty of each such shore station, during the hours it is in operation, to listen in at intervals of not less than fifteen minutes and for a period not less than two minutes, with the receiver tuned to receive messages of three hundred meter wave lengths.

DIVISION OF TIME.

Twelfth. At important seaports and at all other places where naval or military and private or commercial shore stations operate in such close proximity that interference with the work of naval and military stations can not be avoided by the enforcement of the regulations contained in the foregoing regulations concerning wave lengths and character of signals emitted, such private or commercial shore stations as do interfere with the reception of signals by the naval and military stations concerned shall not use their transmitters during the first fifteen minutes of each hour, local standard time. The Secretary of Commerce may, on the recommendation of the department concerned, designate the station or stations which may be required to observe this division of time.

GOVERNMENT STATIONS TO OBSERVE DIVISION OF TIME.

Thirteenth. The naval or military stations for which the above-mentioned division of time may be established shall transmit signals or radiograms only during the first fifteen minutes of each hour, local standard time, except in case of signals or radiograms relating to vessels in distress, as hereinbefore provided.

USE OF UNNECESSARY POWER.

Fourteenth. In all circumstances, except in case of signals or radiograms relating to vessels in distress, all stations shall use the minimum amount of energy necessary to carry out any communication desired.

GENERAL RESTRICTIONS ON PRIVATE STATIONS.

Fifteenth. No private or commercial station not engaged in the transaction of bona fide commercial business by radio communication or in experimentation in connection with the development and manufacture of radio apparatus for commercial purposes shall use a transmitting wave length exceeding two hundred meters, or a transformer input exceeding one kilowatt, except by special authority of the Secretary of Commerce contained in the license of that station: *Provided*, That the owner or operator of a station of the character mentioned in this regulation shall not be liable for a violation of the requirements of the third or fourth regulations to the penalties of one hundred dollars or twenty-five dollars, respectively, provided in this section unless the person maintaining or operating such station shall have been notified in writing that the said transmitter has been found, upon tests conducted by the Government, to be so adjusted as to violate the said third and fourth regulations, and opportunity has been given to said owner or operator to adjust said transmitter in conformity with said regulations.

SPECIAL RESTRICTIONS IN THE VICINITIES OF GOVERNMENT STATIONS.

Sixteenth. No station of the character mentioned in regulation fifteenth situated within five nautical miles of a naval or military station shall use a transmitting wave length exceeding two hundred meters or a transformer input exceeding one-half kilowatt.

SHIP STATIONS TO COMMUNICATE WITH NEAREST SHORE STATIONS.

Seventeenth. In general, the shipboard stations shall transmit their radiograms to the nearest shore station. A sender on board a vessel shall, however, have the right to designate the shore station through which he desires to have his radiograms transmitted. If this can not be done, the wishes of the sender are to be complied with only if the transmission can be effected without interfering with the service of other stations.

LIMITATIONS FOR FUTURE INSTALLATIONS IN VICINITIES OF GOVERNMENT STATIONS.

Eighteenth. No station on shore not in actual operation at the date of the passage of this Act shall be licensed for the transaction of commercial business by radio communication within fifteen nautical miles of the following naval or military stations, to wit: Arlington, Virginia; Key West, Florida; San Juan, Porto Rico; North Head and Tatoosh Island, Washington; San Diego, California; and those established or which may be

established in Alaska and in the Canal Zone; and the head of the department having control of such Government stations shall, so far as is consistent with the transaction of governmental business, arrange for the transmission and receipt of commercial radiograms under the provisions of the Berlin convention of nineteen hundred and six and future international conventions or treaties to which the United States may be a party, at each of the stations above referred to, and shall fix the rates therefor, subject to control of such rates by Congress. At such stations and wherever and whenever shore stations open for general public business between the coast and vessels at sea under the provisions of the Berlin convention of nineteen hundred and six and future international conventions and treaties to which the United States may be a party shall not be so established as to insure a constant service day and night without interruption, and in all localities wherever or whenever such service shall not be maintained by a commercial shore station within one hundred nautical miles of a naval radio station, the Secretary of the Navy shall, so far as is consistent with the transaction of Government business, open naval radio stations to the general public business described above, and shall fix rates for such service, subject to control of such rates by Congress. The receipts from such radiograms shall be covered into the Treasury as miscellaneous receipts.

SECRECY OF MESSAGES.

Nineteenth. No person or persons engaged in or having knowledge of the operation of any station or stations, shall divulge or publish the contents of any messages transmitted or received by such station, except to the person or persons to whom the same may be directed, or their authorized agent, or to another station employed to forward such message to its destination, unless legally required so to do by the court of competent jurisdiction or other competent authority. Any person guilty of divulging or publishing any message, except as herein provided, shall, on conviction thereof, be punishable by a fine of not more than two hundred and fifty dollars or imprisonment for a period of not exceeding three months, or both fine and imprisonment, in the discretion of the court.

PENALTIES.

For violation of any of these regulations, subject to which a license under sections one and two of this Act may be issued, the owner of the apparatus shall be liable to a penalty of one hundred dollars, which may be reduced or remitted by the Secretary of Commerce, and for repeated violations of any of such regulations, the license may be revoked.

For violation of any of these regulations, except as provided in regulation nineteenth, subject to which a license under section three of this Act may be issued, the operator shall be subject to a penalty of twenty-five dollars, which may be reduced or remitted by the Secretary of Commerce, and for repeated violations of any such regulations, the license shall be suspended or revoked.

Interference.

SEC. 5. That every license granted under the provisions of this Act for the operation or use or apparatus for radio communication shall prescribe that the operator thereof shall not willfully or maliciously interfere with any other radio communication. Such interference shall be deemed a misdemeanor, and upon conviction thereof the owner or operator, or both, shall be punishable by a fine of not to exceed five hundred dollars or imprisonment for not to exceed one year, or both.

SEC. 6. That the expression "radio communication" as used in this Act means any system of electrical communication by telegraphy or telephony without the aid of any wire connecting the points from and at which the radiograms, signals, or other communications are sent or received.

False signals.

SEC. 7. That a person, company, or corporation within the jurisdiction of the United States shall not knowingly utter or transmit, or cause to be uttered or transmitted, any false or fraudulent distress signal or call or false or fraudulent signal, call, or other radiogram of any kind. The penalty for so uttering or transmitting a false or fraudulent distress signal or call shall be a fine of not more than two thousand five hundred dollars or imprisonment for not more than five years, or both, in the discretion of the court, for each and every such offense, and the penalty for so uttering or transmitting, or causing to be uttered or transmitted, any other false or fraudulent signal, call, or other radiogram shall be a fine of not more than one thousand dollars or imprisonment for not more than two years, or both, in the discretion of the court, for each and every such offense.

Foreign vessels.

SEC. 8. That a person, company, or corporation shall not use or operate any apparatus for radio communication on a foreign ship in territorial waters of the United States otherwise than in accordance with the provisions of sections four and seven of this Act and so much of section five as imposes a penalty for interference. Save as aforesaid, nothing in this Act shall apply to apparatus for radio communication on any foreign ship.

SEC. 9. That the trial of any offense under this Act shall be in the district in which it is committed, or if the offense is committed upon the high seas or out of the jurisdiction of any particular State or district the trial shall be in the district where the offender may be found or into which he shall be first brought.

SEC. 10. That this Act shall not apply to the Philippine Islands.

SEC. 11. That this Act shall take effect and be in force on and after four months from its passage.

Approved, August 13, 1912.

LONDON INTERNATIONAL RADIOTELEGRAPHIC CONVENTION, PROCLAIMED BY THE PRESIDENT JULY 8, 1913.

London convention.

The International Radiotelegraphic Convention was signed at London July 5, 1912. The convention was ratified by the Senate of the United States on January 22, 1913, with the proviso set forth in the following resolution of concurrence:

> *Resolved (two-thirds of the Senators present concurring therein)*, That the Senate advise and consent to the ratification of the radiotelegraphic convention signed at London on July 5, 1912, with the final protocol and service regulations connected therewith: *Provided*, That the Senate advise and consent to the ratification of said convention with the understanding to be expressed as a part of the instrument of ratification that nothing in the Ninth Article of the Regulations affixed to the convention shall be deemed to exclude the United States from the execution of her inspection laws upon vessels entering in or clearing from her ports.

The London Convention was proclaimed by the President, and took effect July 8, 1913, "to the end that the same and every article and clause thereof may be observed and fulfilled with good faith by the United States and the citizens thereof," and supersedes the Berlin Radiotelegraphic Convention.

The London Convention and Regulations do not modify or repeal the act of August 13, 1912 to regulate radio communication or the acts of June 24, 1910, and July 23, 1912, to require apparatus and operators for radio communication on certain ocean steamers.

INTERNATIONAL RADIOTELEGRAPHIC CONVENTION, LONDON, 1912.

[Translation.]

International Radiotelegraph Convention concluded between Germany and the German Protectorates, the United States of America and the Possessions of the United States of America, the Argentine Republic, Austria, Hungary, Bosnia-Herzegovina, Belgium, the Belgian Congo, Brazil, Bulgaria, Chile, Denmark, Egypt, Spain and the Spanish Colonies, France and Algeria, French West Africa, French Equatorial Africa, Indo-China, Madagascar, Tunis, Great Britain and the various British Colonies and Protectorates, the Union of South Africa, the Australian Federation, Canada, British India, New Zealand, Greece, Italy and the Italian Colonies, Japan and Chosen, Formosa, Japanese Sakhalin and the leased territory of Kwantung, Morocco, Monaco, Norway, the Netherlands, the Dutch Indies and the Colony of Curacao, Persia, Portugal and the Portuguese Colonies, Roumania, Russia and the Russian Possessions and Protectorates, The Republic of San Marino, Siam, Sweden, Turkey, and Uruguay.

The undersigned, plenipotentiaries of the Governments of the countries enumerated above, having met in conference at London, have agreed on the following Convention, subject to ratification:

ARTICLE 1.

Scope.

The High Contracting Parties bind themselves to apply the provisions of the present Convention to all radio stations (both coastal stations and stations on shipboard) which are established or worked by the Contracting Parties and open to public service between the coast and vessels at sea.

They further bind themselves to make the observance of these provisions obligatory upon private enterprises authorized either to establish or work coastal stations for radiotelegraphy open to public service between the coast and vessels at sea, or to establish or work radio stations, whether open to general public service or not, on board of vessels flying their flag.

ARTICLE 2.

Coast stations.

By "coastal stations" is to be understood every radio station established on shore or on board a permanently moored vessel used for the exchange of correspondence with ships at sea.

Every radio station established on board any vessel not permanently moored is called a "station on shipboard."

ARTICLE 3.

Intercommunication.

The coastal stations and the stations on shipboard shall be bound to exchange radiograms without distinction of the radio system adopted by such stations.

Every station on shipboard shall be bound to exchange radiograms with every other station on shipboard without distinction of the radio system adopted by such stations.

However, in order not to impede scientific progress, the provisions of the present Article shall not prevent the eventual employment of a radio system incapable of communicating with other systems, provided that such incapacity shall be due to the specific nature of such system and that it shall not be the result of devices adopted for the sole purpose of preventing intercommunication.

ARTICLE 4.

Limited service.

Notwithstanding the provisions of Article 3, a station may be reserved for a limited public service determined by the object of the correspondence or by other circumstances independent of the system employed.

ARTICLE 5.

Land-line connection.

Each of the High Contracting Parties undertakes to connect the coastal stations to the telegraph system by special wires or, at least, to take other measures which will insure a rapid exchange between the coastal stations and the telegraph system.

ARTICLE 6.

The High Contracting Parties shall notify one another of the names of coastal stations and stations on ship board referred to in Article 1, and also of all data, necessary to facilitate and accelerate the exchange of radiograms, as specified in the Regulations.

ARTICLE 7.

Each of the High Contracting Parties reserves the right to prescribe or permit at the stations referred to in Article 1, apart from the installation the data of which are to be published in conformity with Article 6, the installation and working of other devices for the purpose of establishing special radio communication without publishing the details of such devices.

ARTICLE 8.

Interference.

The working of the radio stations shall be organized as far as possible in such manner as not to disturb the service of other radio stations.

ARTICLE 9.

Radio stations are bound to give absolute priority to calls of distress from whatever source, to similarly answer such calls and to take such action with regard thereto as may be required.

ARTICLE 10.

Rates.

The charge for a radiogram shall comprise, according to the circumstances:

1. (a) The coastal rate, which shall fall to the coastal station;

(b) The shipboard rate, which shall fall to the shipboard station.

2. The charge for transmission over the telegraph lines, to be computed according to the ordinary rules.

3. The charges for transit through the intermediate coastal or shipboard stations and the charges for special services requested by the sender.

The coastal rate shall be subject to the approval of the Government of which the coastal station is dependent, and the shipboard rate to the approval of the Government of which the

ship is dependent.

ARTICLE 11.

The provisions of the present Convention are supplemented by Regulations, which shall have the same force and go into effect at the same time as the Convention.

The provisions of the present Convention and of the Regulations relating thereto may at any time be modified by the High Contracting Parties by common consent. Conferences of plenipotentiaries having power to modify the Convention and the Regulations, shall take place from time to time; each conference shall fix the time and place of the next meeting.

ARTICLE 12.

Such conferences shall be composed of delegates of the Governments of the contracting countries.

In the deliberations each country shall have but one vote.

If a Government adheres to the Convention for its colonies, possessions or protectorates, subsequent conferences may decide that such colonies, possessions or protectorates, or a part thereof, shall be considered as forming a country as regards the application of the preceding paragraph. But the number of votes at the disposal of one Government, including its colonies, possessions or protectorates, shall in no case exceed six.

The following shall be considered as forming a single country for the application of the present Article:

German East Africa
German Southwest Africa
Kamerun
Togo Land
German Protectorates in the Pacific
Alaska
Hawaii and the other American possessions in Polynesia
The Philippine Islands
Porto Rico and the American possessions in the Antilles
The Panama Canal Zone
The Belgian Congo
The Spanish Colony of the Gulf of Guinea
French East Africa
French Equatorial Africa
Indo-China
Madagascar
Tunis
The Union of South Africa
The Australian Federation
Canada
British India
New Zealand
Eritrea
Italian Somaliland
Chosen, Formosa, Japanese Sakhalin and the leased territory of Kwantung.
The Dutch Indies
The Colony of Curacao
Portuguese West Africa
Portuguese East Africa and the Portuguese possessions in Asia
Russian Central Asia (littoral of the Caspian Sea)
Bokhara
Khiva
Western Siberia (littoral of the Arctic Ocean).
Eastern Siberia (littoral of the Pacific Ocean).

ARTICLE 13.

Berne bureau.

The International Bureau of the Telegraph Union shall be charged with collecting, coordinating and publishing information of every kind relating to radiotelegraphy, examining the applications for changes in the Convention or Regulations, promulgating the amendments adopted, and generally performing all administrative work referred to it in the interest of international radiotelegraphy.

The expenses of such institution shall be borne by all the contracting countries.

ARTICLE 14.

Rates.

Each of the High Contracting Parties reserves to itself the right of fixing the terms on which it will receive radiograms proceeding from or intended for any station, whether on shipboard or coastal, which is not subject to the provisions of the present convention.

If a radiogram is received the ordinary rates shall be applicable to it.

Any radiogram proceeding from a station on shipboard and received by a coastal station of a contracting country, or accepted in transit by the administration of a contracting country, shall be forwarded.

Any radiogram intended for a vessel shall also be forwarded if the administration of the contracting country has accepted it originally or in transit from a non-contracting country, the coastal station reserving the right to refuse transmission to a station on shipboard subject to a non-contracting country.

ARTICLE 15.

The provisions of Articles 8 and 9 of this Convention are also applicable to radio installation other than those referred to in Article 1.

ARTICLE 16.

Governments which are not parties to the present Convention shall be permitted to adhere to it upon their request. Such adherence shall be communicated through diplomatic channels to the contracting Government in whose territory the last conference shall have been held, and by the latter to the remaining Governments

The adherence shall carry with it to the fullest extent acceptance of all the clauses of this Convention and admission to all of the advantages stipulated therein.

The adherence to the Convention by the Government of a country having colonies, possessions or protectorates shall not carry with it the adherence of its colonies, possessions or protectorates unless a declaration to that effect is made by such Government. Such colonies, possessions and protectorates, as a whole or each of them, separately, may form the subject of a separate adherence or a separate denunciation within the provision of the present Article and of Article 22.

ARTICLE 17.

The provisions of Articles 1, 2, 3, 5, 6, 7, 8, 11, 12 and 17 of the International Telegraph Convention of St. Petersburg of July 10-22, 1875, shall be applicable to international radiotelegraphy. [See translation of the Articles of the International Telegraph Convention.]

ARTICLE 18.

In case of disagreement between two or more contracting Governments regarding the interpretation or execution of the present Convention or of the Regulations referred to in Article 11, the question in dispute may, by mutual agreement, be submitted to arbitration. In such case each of the Governments concerned shall choose another Government not interested in the question at issue.

The decision of the arbiters shall be arrived at by the absolute majority of votes.

In case of a division of votes, the arbiters shall choose, for the purpose of settling the disagreement, another contracting Government which is likewise a stranger to the question at issue. In case of failure to agree on a choice, each arbiter shall propose a disinterested contracting Government, and lots shall be drawn between the Governments proposed. The

drawing of the lots shall fall to the Government within whose territory the international bureau provided for in Article 13 shall be located.

ARTICLE 19.

The High Contracting Parties bind themselves to take, or propose to their respective legislatures, the necessary measures for insuring the execution of the present Convention.

ARTICLE 20.

The High Contracting Parties shall communicate to one another any laws already framed, or which may be framed, in their respective countries relative to the object of the present Convention.

ARTICLE 21.

The High Contracting Parties shall preserve their entire liberty as regards radio installations other than provided for in Article 1, especially naval and military installations, and stations used for communication between fixed points. All such installations and stations shall be subject only to the obligations provided for in Articles 8 and 9 of the Present Convention.

However, when such installations are used for public maritime service they shall conform, in the execution of such service, to the provisions of the Regulations as regards the mode of transmission and rates.

On the other hand, if coastal stations are used for general public service with ships at sea and also for communication between fixed points, such stations shall not be subject, in the execution of the last named service, to the provisions of the Convention except for the observance of Articles 8 and 9 of this Convention.

Nevertheless, fixed stations used for correspondence between land and land shall not refuse the exchange of radiograms with another fixed station on account of the system adopted by such station; the liberty of each country shall, however, be complete as regards the organization of the service for correspondence between fixed points and the nature of the correspondence to be offered by the stations reserved for such service.

ARTICLE 22.

The present Convention shall go into effect on the 1st day of July, 1913, and shall remain in force for an indefinite period or until the expiration of one year from the day when it shall be denounced by any of the contracting parties.

Such denunciation shall affect only the Government in whose name it shall have been made. As regards the other Contracting Powers, the Convention shall remain in force.

ARTICLE 23.

The present Convention shall be ratified and the ratifications exchanged at London with the least possible delay.

In case one or several of the High Contracting Parties shall not ratify the Convention, it shall nevertheless be valid as to the Parties which have ratified it.

In witness whereof the respective plenipotentiaries have signed one copy of the Convention, which shall be deposited in the archives of the British Government, and a copy of which shall be transmitted to each Party.

Done at London, July 5, 1912.

[Translation.]

FINAL PROTOCOL.

At the moment of signing the Convention adopted by the International Radiotelegraph Conference of London, the undersigned plenipotentiaries have agreed as follows:

I.

The exact nature of the adherence notified on the part of Bosnia-Herzegovina not yet being determined, it is recognized that one vote shall be assigned to Bosnia-Herzegovina but that a decision will be necessary at a later date as to whether this vote belongs to Bosnia-Herzegovina in virtue of the second paragraph of Article 12 of the Convention, or whether this vote is accorded to it in conformity with the provisions of the third paragraph of that article.

II.

Note is taken of the following declaration:

The Delegation of the United States declares that its government is under the necessity of abstaining from all action with regard to rates, because the transmission of radiograms as well as of ordinary telegrams in the United States is carried on, wholly or in part, by commercial or private companies.

III.

Note is likewise taken of the following declaration:

The Government of Canada reserves the right to fix separately, for each of its coastal stations, a total maritime rate for radiograms proceeding from North America and destined for any ship whatever, the coastal rate amounting to three-fifths and the shipboard rate to two-fifths of the total rate.

In witness whereof the respective plenipotentiaries have drawn up the present Final Protocol, which shall be of the same force and effect as though the provisions thereof had been embodied in the text of the Convention itself to which it has reference, and they have signed one copy of the same, which shall be deposited in the archives of the British Government, and a copy of which shall be transmitted to each of the Parties.

Done at London, July 5, 1912.

SERVICE REGULATIONS AFFIXED TO THE INTERNATIONAL RADIOTELEGRAPHIC CONVENTION, LONDON, 1912.

[Translation.]

ORGANIZATION OF RADIO STATIONS.

ARTICLE I.

Service regulations.
Progress.

The choice of radio apparatus and devices to be used by the coastal stations and stations on shipboard shall be unrestricted. The installation of such stations shall as far as possible keep pace with scientific and technical progress.

ARTICLE II.

Wave lengths.

Two wave lengths, one of 600 meters and the other of 300 meters, are authorized for general public service. Every coastal station opened to such service shall be equipped in such manner as to be able to use these two wave lengths, one of which shall be designated as the normal wave length of the station. During the whole time that a coastal station is open it shall be in condition to receive calls according to its normal wave length. For the correspondence specified under paragraph 2 of Article XXXV, however, a wave length of 1,800 meters shall be used. In addition, each Government may authorize in coastal stations the employment of other wave lengths designed to insure long-range service or any service other than for general public correspondence established in conformity with the provisions of the Convention under the reservation that such wave lengths do not exceed 600 meters or that they do exceed 1,600 meters.

In particular, stations used exclusively for sending signals designed to determine the position of ships shall not employ wave lengths exceeding 150 meters.

ARTICLE III.

1. Every station on shipboard shall be equipped in such manner as to be able to use wave lengths of 600 meters and of 300 meters. The first shall be the normal wave length and may not be exceeded for transmission except in the case referred to under Article XXXV (paragraph 2).

Other wave lengths, less 600 meters, may be used in special cases and under the approval of the managements to which the coastal and shipboard stations concerned are subject.

2. During the whole time that a station on shipboard is open it shall be able to receive calls according to its normal wave length.

3. Vessels of small tonnage which are unable to use a wave length of 600 meters for transmission, may be authorized to employ exclusively the wave length of 300; they must be able to receive a wave length of 600 meters.

ARTICLE IV.

Wave lengths.

Communication between a coastal station and a station on shipboard shall be exchanged on the part of both by means of the same wave length. If, in a particular case, communication is difficult, the two stations may by mutual consent, pass from the wave length with which they are communicating to the other regulation wave length. Both stations shall resume their normal wave length when the exchange of radiograms is finished.

ARTICLE V.

Berne list.

1. The International Bureau shall draw up, publish, and revise from time to time an official chart showing the coastal stations, their normal ranges, the principal lines of navigation, and the time normally taken by ships for the voyage between the different ports of call.

2. It shall draw up and publish a list of radio stations of the class referred to in Article I of the Convention, and from time to time supplements covering additions and modifications. Such list shall contain for each station the following data:

(1) In the case of coastal stations; name, nationality and geographical location indicated by the territorial sub-division and the latitude and longitude of the place; in the case of stations on shipboard; name and nationality of the ship; when the case arises, the name and address of the party working the station;

(2) The call letters (the calls shall be distinguishable from one another and each must be formed of a group of three letters);

(3) The normal range;

(4) The radio system with the characteristics of the transmitting system (musical sparks, tonality expressed by the number of double vibrations, etc.);

(5) The wave lengths used (the normal wave length to be underscored);

(6) The nature of the services carried on;

(7) The hours during which the station is open;

(8) When the case arises, the hour and method of transmitting time signals and meteorological telegrams;

(9) The coastal rate or shipboard rate.

3. The list shall contain such data related to radio stations other than those specified in Article I of the Convention as may be communicated to the International Bureau by the management of the Radio Service ("administration") to which such stations are subject, provided that such managements are either adherents to the Convention or, if not adherents, have made the declaration refered to in Article XLVIII.

4. The following notations shall be adopted in documents for use by the International Service to designate radio stations:

PG Station open to general public correspondence.
PR Station open to limited public correspondence.
P Station of private interest.
O Station open exclusively to official correspondence.
N Station having continuous service.
X Station having no fixed working hours.

5. The name of a station on shipboard appearing in the first column of the list shall be followed, in case there are two or more vessels of the same name, by the call letters of such

station.

ARTICLE VI.

Superfluous signals.

The exchange of superfluous signals and words is prohibited to stations of the class referred to in Article 1 of the Convention. Experiments and practice will be permitted in such stations in so far as they do not interfere with the service of other stations.

Practice shall be carried on with wave lengths different from those authorized for public correspondence with the minimum of power necessary.

ARTICLE VII.

Reduced power.

&n>

Transfer interrupted!

und to carry on the service with the minimum of energy necessary to insure safe communication.

2. Every coastal or shipboard station shall comply with the following requirements:

(a) The waves sent out shall be as pure and as little damped as possible;

In particular, the use of transmitting devices in which the waves sent out are obtained by means of sparks directly in the aerial (plain aerial) shall not be authorized except in cases of distress.

It may, however, be permitted in the case of certain special stations (those of small vessels for example) in which the primary power does not exceed 50 watts.

(b) The apparatus shall be able to transmit and receive at a speed equal to at least 20 words a minute, words to be counted at a rate of 5 letters each.

New installation using more than 50 watts shall be equipped in such a way as to make it possible to obtain with ease several ranges less than the normal range, the shortest being approximately 15 nautical miles. Existing installations using more than 50 watts shall be remodeled, wherever possible, so as to comply with the foregoing provisions.

(c) Receiving apparatus shall be able to receive, with the greatest possible protection against interference, transmissions of the wave lengths specified in the present Regulations, up to 600 meters.

Fog signals.

3. Stations serving solely for determining the position of ships (radiophares) shall not operate over a radius greater than 30 nautical miles.

ARTICLE VIII.

Range.

Independently of the general requirements specified under Article VII, stations on shipboard shall likewise comply with the following requirements:

(a) The power transmitted to the radio apparatus, measured at the terminals of the generator of the station, shall not, under normal conditions, exceed one kilowatt.

(b) Subject to the provisions of Article XXXV, paragraph 2, power exceeding one kilowatt may be employed when the vessel finds it necessary to correspond while more than 200 nautical miles distant from the nearest coastal station, or when, owing to unusual circumstances, communication can be established only by means of an increase of power.

ARTICLE IX.

License.

1. No station on shipboard shall be established or worked by private enterprise without a license issued by the Government to which the vessel is subject.

ARTICLE X.

Stations on board of ships having their port of registry in a colony, possession, or protectorate may be described as subject to the authority of such colony, possession, or protectorate.

2. Every shipboard station holding a license issued by one of the contracting Governments shall be considered by the other Governments as having an installation fulfilling the requirements stipulated in the present Regulations.

Competent authorities of the countries at which the ship calls may demand the production of the license. In default of such production, these authorities may satisfy themselves as to whether the radio installations of the ship fulfill the requirements imposed by the present regulations.

When the management of the radio service of a country is convinced by its working that a station on shipboard does not fulfill the requirements, it shall, in every case, address a complaint to the management of the radio service of the country to which such ship is a subject. The subsequent procedure, when necessary, shall be the same as that prescribed in Article XII, par>

Transfer interrupted!

Operators.

1. The service of the station on shipboard shall be carried on by a telegraph operator holding a certificate issued by the Government to which the vessel is subject, or, in case of necessity and for one voyage only, by some other adhering Government.

2. There shall be two classes of certificates:

The first class certificate shall attest the professional efficiency of the operator as regards:

(a) Adjustment of the apparatus and knowledge of its functioning;

(b) Transmission and acoustic reception at the rate of not less than 20 words a minute;

(c) Knowledge of the regulations governing the exchange of radio correspondence.

The second class certificate may be issued to operators who are able to transmit and receive at a rate of only 12 to 19 words a minute but who, in other respects, fulfill the requirements mentioned above. Operators holding second class certificates may be permitted on:

(a) Vessels which use radiotelegraphy only in their own service and in the correspondence of their crews, fishing vessels in particular;

(b) All vessels, as substitutes, provided such vessels have on board at least *one* operator holding a first-class certificate. However, on vessels classed under the first category indicated in Article XIII, the service shall be carried on by at least two telegraph operators holding first-class certificates.

In the stations on shipboard, transmissions shall be made only by operators holding first or second-class certificates except in cases of necessity where it would be impossible to conform to this provision

3. The certificate shall furthermore state that the Government has bound the operator to secrecy with regard to the correspondence.

4. The radio service of the station on shipboard shall be under the superior authority of the commanding officer of the ship.

ARTICLE XI.

Emergency equipment.

Ships provided with radio installations and classed under the first two categories indicated in Article XIII are bound to have radio installations for distress calls all the elements of which shall be kept under conditions of the greatest possible safety to be determined by the Government issuing the license. Such emergency installation shall have their own source of energy, be capable of quickly being set into operation, of functioning for at least six hours, and have a minimum range of 80 nautical miles for ships of the first category and 50 miles for those of the second. Such emergency installations shall not be required in the case of vessels the regular installations of which fulfill the requirements of the present Article.

ARTICLE XII.

Violations.

If the management of the radio service of a country has knowledge of any infraction of the Convention or of the Regulations committed in any of the stations authorized by it, it shall ascertain the facts and fix the responsibility.

In the case of stations on shipboard, if the operator is responsible for such infraction, the management of the radio service shall take the necessary measures, and, if the necessity should arise, withdraw the certificate. If it is ascertained that the infraction is the result of the condition of the apparatus or of instructions given the operator, the same method shall be pursued with regard to the license issued to the vessel.

2. In cases of repeated infractions chargeable to the same vessel, if the representations made

to the management of the country to which the vessel is subject by that of another country remain without effect, the latter shall be at liberty, after giving due notice, to authorize its coastal stations not to accept communications proceeding from the vessel at fault. In case of disagreement between the managements of the radio service of two countries, the question shall be submitted to arbitration at the request of either of the two Governments concerned. The procedure is indicated in Article 18 of the Convention.

2. HOURS OF SERVICE OF STATIONS.

ARTICLE XIII.

Hours of service.

(a) Coastal stations:

1. The service of coastal stations shall, as far as possible be constant, day and night, without interruption.

Certain coastal stations, however, may have a service of limited duration. The management of the radio service of each country shall fix the hours of service.

2. The coastal stations whose service is not constant shall not close before having transmitted all their radiograms to the vessels which are within their radius of action, nor before having received from such vessels all the radiograms of which notice has been given. This provision is likewise applicable when vessels signal their presence before the actual cessation of work.

Classification of ship stations.

(b) Stations on shipboard:

3. Stations on shipboard shall be classed under three categories:

(1) Stations having constant service;

(2) Stations having a service of limited duration;

(3) Stations having no fixed working hours.

When the ship is under way, the following shipboard stations shall have an operator constantly listening in; 1st, Stations of the first category; 2nd, Those of the second category during the hours in which they are open to service. During the remaining hours, the last named stations shall have an operator at the radio instrument listening in during the first ten minutes of each hour. Stations of the third category are not bound to perform any regular service of listening in.

It shall fall to the Governments issuing the licenses specified in Article IX to fix the category in which the ship shall be classed as regards its obligations in the matter of listening in. Mention shall be made of such classification in the license.

3. FORM AND POSTING OF RADIOGRAMS.

ARTICLE XIV.

Messages forms.

1. Radiograms shall show, as the first word of the preamble, that the service is "radio."

2. In the transmission of radiograms proceeding from a ship at sea, the date and hour of posting at the shipboard station shall be stated in the preamble.

3. Upon forwarding a radiogram over the telegraph system, the coastal station shall show thereon as the office of origin, the name of the ship of origin as it appears in the list, and also when the case arises, that of the last ship which acted as intermediary. These data shall be followed by the name of the coastal station.

ARTICLE XV.

The address of radiograms intended for ships shall be as complete as possible.

It shall embrace the following:

(a) The name or title of the addressee, with additional designations, if any;

(b) The name of the vessel as it appears in the first column of the list;

(c) The name of the coastal station as it appears in the list.

The name of the ship, however, may be replaced, at the sender's risk, by the designation of the route to be followed by such vessel, as determined by the names of the ports of departure and destination or by any other equivalent information.

2. In the address, the name of the ship as it appears in the first column of the list, shall, in all

cases and independently of its length, be counted as one word.

3. Radiograms framed with the aid of the International Code of Signals shall be transmitted to their destination without being translated.

4. RATES.

ARTICLE XVI.

Rates.

1. The coastal rate and the shipboard rate shall be fixed in accordance with the tariff per word, pure and simple, on the basis of an equitable remuneration for the radio work, with an optional minimum rate per radiogram.

The coastal rate shall not exceed 60 centimes (11.6 cents) a word, and the shipboard rate shall not exceed 40 centimes (7.7 cents) a word. However, each management shall be at liberty to authorize coastal and shipboard rates higher than such maxima in the case of stations of ranges exceeding 400 nautical miles, or of stations whose work is exceptionally difficult owing to physical conditions in connection with the installation or working of the same.

The optional minimum rate per radiogram shall not be higher than the coastal rate or shipboard rate for a radiogram of ten words.

2. In the case of radiograms proceeding from or destined for a country and exchanged directly with the coastal stations of such country, the rate applicable to the transmission over the telegraph lines shall not, on the average, exceed the inland rate of such country.

Such rate shall be computed per word, pure and simple, with an optional minimum rate which shall not exceed the rate for ten words. It shall be stated in francs by the management of the radio service of the country to which the coastal station is subject.

In the case of countries of the European system, with the exception of Russia and Turkey, there shall be but one rate for the territory of each country.

ARTICLE XVII.

1. When a radiogram proceeding from a ship and intended for the coast passes through one or two shipboard stations, the charges shall comprise, in addition to the rates of the shipboard station of origin, the coastal station and the telegraph lines, the shipboard rate of each of the ships which have participated in the transmission.

2. The sender of a radiogram proceeding from the coast and intended for a ship may require that his message be transmitted by way of one or two stations on shipboard; he shall deposit for this purpose an amount equal to the radio and telegraph rates and, in addition, a sum to be fixed by the office of origin, as surety for the payment to the intermediary shipboard stations of the transit rates fixed by paragraph 1. He shall further pay, at his option, either the rate for a telegram of five words or the price of the postage on a letter to be sent by the coastal station to the office of origin giving the necessary information for the liquidation of the amounts deposited.

The radiogram shall then be accepted at the sender's risk; it shall show before the address the prepaid instruction, to wit: "X retransmissions telegraph" or "X retransmissions letter" according to whether the sender desired the information necessary for the liquidation of the deposits to be furnished by telegram or by letter.

3. The rate for radiograms proceeding from a ship intended for another ship, and forwarded through one or two intermediary coastal stations shall comprise:

The shipboard rates of the two ships, the coastal rate of the coastal station or two coastal stations, as the case may be, and the telegraph rate, when necessary, applicable to the transmission between the two coastal stations.

4. The rate for radiograms exchanged between ships without the intervention of a coastal station shall comprise the shipboard rates of the vessels of origin and destination together with the shipboard rates of the intermediary stations.

5. The coastal and shipboard rates accruing to the stations of transit shall be the same as those fixed for such stations when they are stations of origin or destination. In no case shall they be collected more than once.

6. In the case of every coastal station acting as intermediary, the rate to be collected for the service of transit shall be the highest coastal rate applicable to direct communication with the two ships concerned.

ARTICLE XVIII.

The country within whose territory a coastal station is established which serves as intermediary for the exchange of radiograms between a station on board ship and another country shall be considered, so far as the application of telegraph rates is concerned, as the country of origin or of destination of such radiograms, and not as the country of transit.

5. COLLECTION OF CHARGES.

ARTICLE XIX.

Collection of charges.

The total charge for radiograms shall be collected of the sender, with the exception of:
(1) Charges for special delivery (Art. LVIII, Par. 1, of the Telegraph Regulations);
(2) Charges applicable to inadmissible combinations or alterations of words noted by the office or station of destination (Art. XIX, par. 9 of the Telegraph Regulations) such charges being collected of the addressee.

Stations on shipboard shall to that end have the necessary tariffs. They shall be at liberty, however, to obtain information from coastal stations on the subject of rates for radiograms for which they do not possess all the necessary data.

2. The counting of words by the office of origin shall be conclusive in the case of radiograms intended for ships and that of the shipboard station of origin shall be conclusive in the case of radiograms proceeding from ships, both for purposes of transmission and of the international accounts. However, when the radiogram is worded wholly or in part, either in one of the languages of the country of destination in the case of radiograms proceeding from ships, or in one of the languages of the country to which the ship is subject, in the case of radiograms intended for ships, and contains combinations or alterations of words contrary to the usage of such language, the bureau or shipboard station of destination, as the case may be, shall have the right to recover from the addressee the amount of charge not collected. In case of refusal to pay, the radiogram may be withheld.

6. TRANSMISSION OF RADIOGRAMS.

(A) SIGNALS OF TRANSMISSION.

ARTICLE XX.

Code.

The signals to be employed are those of Morse International Code.

ARTICLE XXI.

Distress.

Ships in distress shall use the following signal:

●●●▬▬▬●●●

repeated at brief intervals, followed by the necessary particulars.

As soon as a station hears the signal of distress it shall cease all correspondence and not resume it until after it has made sure that the correspondence to which the call for assistance has given rise is terminated.

Stations which hear a signal of distress shall conform to the instructions given by the ship making such signal as regards the order of the messages or their cessation.

In case the call letters of a particular station are added at the end of the series of calls for assistance, the answer to the call shall be incumbent upon that station alone unless such station fails to reply. If the call for assistance does not specify any particular station, every station hearing such call shall be bound to answer it.

ARTICLE XXII.

Abbreviations.

For the purpose of giving or requesting information concerning the radio service, stations shall make use of the signals contained in the list appended to the present Regulations.

(B) ORDER OF TRANSMISSION.

ARTICLE XXIII.

Order of business.

Between two stations radiograms of the same order shall be transmitted one by one, by the two stations alternately, or in series of several radiograms, as the coastal station may indicate, provided the duration of the transmission of each series does not exceed fifteen minutes.

(C) METHOD OF CALLING RADIO STATIONS AND TRANSMISSION OF RADIOGRAMS.

ARTICLE XXIV.

Calling.

1. As a general rule, it shall be the shipboard station that calls the coastal station whether it has radiograms to transmit or not.

2. In waters where the radio traffic is very great (British Channel, etc.), a coastal station should not, as a general rule, be called by a shipboard station unless the former is within normal range of the shipboard station and not until the distance of the vessel from the coastal station is less than 75 per cent of the normal range of the latter.

3. Before proceeding to call, the coastal station or the station on shipboard shall adjust its receiving apparatus to its maximum sensibility and make sure that no other correspondence is being carried on within its radius of action; if it finds otherwise, it shall wait for the first pause, unless it is convinced that its call will not be likely to disturb the correspondence in progress. The same applies in case the station desires to answer a call.

4. For calling, every station shall use the normal wave of the station it wishes to call.

5. If in spite of these precautions the transmission of a radiogram is impeded at any place, the call shall cease upon the first request from a coastal station open to public correspondence. The latter station shall in such case indicate the approximate length of time it will be necessary to wait.

6. The station on shipboard shall make known to every coastal station to which it has signaled its presence the moment at which it proposes to cease its operations and the probable duration of the interruption.

ARTICLE XXV.

1. The call shall comprise the signal

— · — · —

the call letters of the station called transmitted three times, the word "from" (de) followed by the call letters of the sending station transmitted three times.

2. The called station shall answer by making the signal

— · — · —

followed by the call letters of the corresponding station transmitted three times, the word "from," its own call letters, and the signal

— · —

3. Stations desiring to enter into communication with ships, without, however, knowing the names of the ships within their radius of action, may employ the signal — · — · — — · — (signal of inquiry). The provisions of paragraphs 1 and 2 are likewise applicable to the transmission of a signal of inquiry and to the answer to such signal.

ARTICLE XXVI.

Repeating.

If a station called does not answer the call (Article XXV) transmitted three times at intervals of two minutes, the call shall not be resumed until after an interval of fifteen minutes, the station issuing the call having first made sure of the fact that no radio correspondence is in progress.

ARTICLE XXVII.

High power.

Every station which has occasion to transmit a radiogram requiring the use of high power shall first send out three times the signal of warning ▬ ▬ • • ▬ ▬ with the minimum of power necessary to reach the neighboring stations. It shall not begin to transmit with high power until 30 seconds after sending the signal of warning.

ARTICLE XXVIII.

Order of information.

1. As soon as the coastal station has answered, the shipboard station shall furnish it with the following data in case it has messages to transmit; such data shall likewise be furnished upon request from the coastal station:

(a) The approximate distance, in nautical miles, of the vessel from the coastal station;

(b) The position of the vessel indicated in a concise form and adapted to the circumstances of the case;

(c) Her next port of call;

(d) The number of radiograms, if they are of normal length, or the number of words if the messages are unusually long.

The speed of the ship in nautical miles shall also be given if specially requested by the coastal station.

2. The coastal station shall answer stating, as provided in paragraph 1, either the number of radiograms or the number of words to be transmitted to the ship, and also the order of transmission.

3. If the transmission can not take place immediately, the coastal station shall inform the station on shipboard of the approximate length of time that it will be necessary to wait.

4. If the shipboard station called can not receive for the moment, it shall inform the station calling of the approximate length of time that it will be necessary to wait.

5. In the exchange of messages between two stations on shipboard, it shall fall to the station called to fix the order of transmission.

ARTICLE XXIX.

Authority of coast stations.

When a coastal station receives calls from several shipboard stations, it shall decide the order in which such stations shall be admitted to exchange their messages.

In fixing this order the coastal station shall be guided exclusively by the necessity of permitting each station concerned to exchange the greatest possible number of radiograms.

ARTICLE XXX.

Before beginning the exchange of correspondence the coastal station shall advise the shipboard station whether the transmission is to be effected in the alternate order or by series (Article XXIII); it shall then begin the transmission or follow up the preliminaries with the signal

▬ • ▬

ARTICLE XXXI.

Signals.

The transmission of the radiogram shall be preceded by the signal

—·—·—

and terminated by the signal

·—·—·

followed by the name of the sending station and by the signal

—·—

In the case of a series of radiograms, the name of the sending station and the signal —·— shall only be given at the end of the series.

ARTICLE XXXII.

Break.

When a radiogram to be transmitted contains more than 40 words, the sending station shall interrupt the transmission by the signal ··——·· after each series of about 20 words and shall not resume it until after it has obtained from the receiving station a repetition of the last word duly received, followed by the said signal, or, if the reception is good, by the signal

—·—

In the case of transmission by series, acknowledgment of receipt shall be made after each radiogram.

Coastal stations engaged in the transmission of long radiograms shall suspend the transmission at the end of each period of 15 minutes, and remain silent for a period of three minutes before resuming the transmission.

Coastal and shipboard stations working under the conditions specified in Article XXXV, par. 2, shall suspend work at the end of each period of 15 minutes and listen in with a wave length of 600 meters during a period of three minutes before resuming the transmission.

ARTICLE XXXIII.

Repeating.

1. When the signals become doubtful every possible means shall be resorted to to finish the transmission. To this end the radiogram shall be transmitted three times at most at the request of the receiving station. If in spite of such triple repetition the signals are still unreadable the radiogram shall be canceled.

If no acknowledgment of receipt is received the transmitting station shall again call up the receiving station. If no reply is made after three calls the transmission shall not be followed up any further. In such case the sending station shall have the privilege of obtaining the acknowledgment of receipt through the medium of another radio station, using, when necessary, the lines of the telegraph system.

2. If in the opinion of the receiving station the radiogram, although imperfectly received, is nevertheless capable of transmission, said station shall enter the words "reception doubtful" at the end of the preamble and let the radiogram follow. In such case the management of the radio service of the country to which the coastal station is subject shall claim the charges in conformity with Article XLII of the present Regulations. If, however, the shipboard station subsequently transmits the radiogram to another coastal station of the same management, the latter can claim only the rates applicable to a single transmission.

(D) ACKNOWLEDGEMENT OF RECEIPT AND CONCLUSION OF WORK.

ARTICLE XXXIV.

1. Receipt shall be acknowledged in the form prescribed by the International Telegraph Regulations; it shall be preceded by the call letters of the transmitting station and followed by those of the receiving station.

2. The conclusion of a correspondence between two stations shall be indicated by each of the two stations by means of the signal.

• • • — • —

followed by its own call letters.

(E) DIRECTIONS TO BE FOLLOWED IN SENDING RADIOGRAMS.

ARTICLE XXXV.

Nearest station.

1. In general, the shipboard stations shall transmit their radiograms to the nearest coastal station.

Nevertheless, if a shipboard station has the choice between several coastal stations at equal or nearly equal distances, it shall give the preference to the one established on the territory of the country of destination or normal transit for its radiograms.

2. A sender on board a vessel shall, however, have the right to designate the coastal station through which he desires to have his radiogram transmitted. The station on shipboard shall then wait until such coastal station shall be the nearest.

In exceptional cases transmission may be made to a more distant coastal station, provided that:

(a) The radiogram is intended for the country in which such coastal station is situated and emanates from a ship subject to that country;

1,800-meter wave length.

(b) Both stations use for calling and transmission a wave length of 1,800 meters;

(c) Transmission with this wave length does not interfere with a transmission made by means of the same wave length by a nearer coastal station;

(d) The station on shipboard is more than 50 nautical miles distant from any coastal station given in the list. The distance of 50 miles may be reduced to 25 miles provided the maximum power at the terminals of the generator does not exceed 5 kilowatts and that the stations on shipboard are established in conformity with Articles VII and VIII. This reduction in the distance shall not be admissible in the seas, bays or gulfs of which the shores belong to one country only and of which the opening to the high sea is less than 100 miles wide.

7. DELIVERY OF RADIOGRAMS AT THEIR DESTINATION.

ARTICLE XXXVI.

Delivery of messages.

When for any cause whatever a radiogram proceeding from a vessel at sea and intended for the coast can not be delivered to the addressee, a notice of nondelivery shall be issued. Such notice shall be transmitted to the coastal station which received the original radiogram. The latter, after verifying the address, shall forward the notice to the ship, if possible, by the intervention, if need be, of another coastal station of the same country or of a neighboring country.

When a radiogram received by a shipboard station can not be delivered, the station shall notify the office of the origin by official notice. In the case of radiograms emanating from the coast, such notice shall be transmitted, whenever practicable, to the coastal station through which the radiogram has passed in transit; otherwise, to another coastal station of the same country or of a neighboring country.

ARTICLE XXXVII.

If the ship for which a radiogram is intended has not signalled her presence to the coastal station within the period designated by the sender, or, in the absence of such designation, by the morning of the 8th day following, the coastal station shall so notify the office of origin which shall in turn inform the sender.

The latter shall have the right to ask, by a paid official notice, sent by either telegraph or mail and addressed to the coastal station, that his radiogram be held for a further period of 9 days for transmission to the vessel, and so on. In the absence of such request, the radiogram shall be put aside as not transmissible at the end of the 9th day (exclusive of the day of posting).

Nevertheless, if the coastal station is certain that the vessel has left its radius of action before it has been able to transmit the radiogram to her, such station shall immediately so notify the office of origin which shall without delay inform the sender of the cancellation of the message. The sender may, however, by a paid official notice, request the coastal station to transmit the radiogram the next time the vessel shall pass.

8. SPECIAL RADIOGRAMS.

ARTICLE XXXVIII.

Special messages.

The following radiograms only shall be accepted for transmission:

(1) Radiograms which answer prepaid. Such radiograms shall show before the address the indication "Answer prepaid" or "R P" supplemented by a statement of the amount paid in advance for the answer, thus: "Response Payee fr. x", or "R P fr. x";

The reply voucher issued by a station on shipboard shall carry with it the right to send, within the limits of its value, a radiogram to any destination whatever from the station on shipboard which has issued such voucher.

(2) Radiograms calling for repetition of message (for purposes of verification);

(3) Special delivery radiograms. Only, however, in cases where the amount of the charges for special delivery collected of the addressee. Countries which can not accept such radiograms shall make a declaration to this effect to the International Bureau. Special delivery radiograms with charges collected of the sender may be accepted when they are intended for the country within whose territory the corresponding station is located.

(4) Radiograms to be delivered by mail;

(5) Multiple radiograms;

(6) Radiograms calling for acknowledgment of receipt. But only as regards notification of the date and hour at which the coastal station shall have transmitted to the station on shipboard the radiogram addressed to the latter.

(7) Paid service notices. Except those requesting a repetition or information. Nevertheless all paid service notices shall be accepted in transmission over the telegraph lines.

(8) Urgent telegrams. But only in transmission over the telegraph lines and subject to the application of the International Telegraph Regulations.

ARTICLE XXXIX.

Radiograms may be transmitted by a coastal station to a ship, or by a ship to another ship, with a view to being forwarded by mail from a port of call of the ship receiving the radiogram.

Such radiogram shall not be entitled to any radio retransmission.

The address of such radiogram shall embrace the following:

(1) The paid designation "mail" followed by the name of the port to which the radiogram is to be mailed;

(2) The name and complete address of the addressee;

(3) The name of the station on shipboard by which the radiogram is to be mailed;

(4) When necessary, the name of the coastal station.

Example: Mail Buenosaires 14 Calle Prat Valparaiso Avon Lizard.

The rate shall comprise, in addition to the radio and telegraph rates, a sum of 25 centimes (.048 cents) for the postage on the radiogram.

9. FILES.

ARTICLE XL.

Records and files.

The originals of radiograms together with the documents relating thereto retained by the managements of the radio service shall be kept, with all the necessary precautions as regards secrecy, for a period of at least fifteen months beginning with the month following that of the

posting of the radiogram.

Such originals and documents shall, as far as practicable, be sent at least once a month by the shipboard stations to the management of the radio service to which they are subject.

10. REBATES AND REIMBURSEMENTS

ARTICLE XLI.

Accounts.

1. With regard to rebates and reimbursements, the International Telegraph Regulations shall be applicable, taking into account the restrictions specified in Article XXXVIII and XXXIX of the present Regulations and subject to the following reservations:

The time employed in the transmission of radiograms and the time that radiograms remain in a coastal station in the case of radiograms intended for ships, or in the station on shipboard in the case of radiograms proceeding from ships, shall not be counted as delays as regards rebates or reimbursements.

If the coastal station notifies the office of origin that a radiogram can not be transmitted to the ship addressed, the management of the radio service of the country of origin shall immediately instigate reimbursement to the sender of the coastal and shipboard rates relating to the radiogram. In such case, the refunded charges shall not enter into the accounts provided for by Article XLII, but the radiogram shall be mentioned therein as a memorandum.

Reimbursements shall be borne by the different managements of the radio service and private enterprises which have taken part in the transmission of the radiogram, each management or private enterprise relinquishing its share of the rate. Radiograms to which Articles 7 and 8 of the Convention of St. Petersburg are applicable shall remain subject, however, to the provisions of the International Telegraph Regulations, except when the acceptance of such radiograms is the result of an error made by the telegraph service.

2. When the acknowledgment of receipt of a radiogram has not reached the station which has transmitted the message, the charges shall be refunded only if the fact has been established that the radiogram is entitled to reimbursement.

11. ACCOUNTS AND PAYMENTS OF CHARGES.

ARTICLE XLII.

1. The coastal and shipboard charges shall not enter into the accounts provided for by the International Telegraph Regulations.

The accounts regarding such charges shall be liquidated by the managements of the radio service of the countries concerned. They shall be drawn up by the radio managements to which the coastal stations are subject, and communicated by them to the radio managements concerned. In cases where the working of the coastal stations is independent of the management of the radio service of the country, the party working such stations may be substituted, as regards the accounts, for the radio management of such country.

2. For transmission over the telegraph lines radiograms shall be treated, so far as the payment of rates is concerned, in conformity with the International Telegraph Regulations.

3. For radiograms proceeding from ships, the radio management to which the coastal station is subject shall charge the radio management to which the shipboard station of origin is subject with the coastal and ordinary telegraph rates, the total charges collected for answers prepaid, the coastal and telegraph rates collected for repetition of message (for purposes of verification), charges relating to special delivery (in the case provided for in Article XXXVIII), or delivery by mail, and those collected for additional copies (TM). The radio management to which the coastal station is subject shall credit, when the case arises, through the channel of the telegraph accounts and through the medium of the offices which have participated in the transmission of the radiograms, the radio management to which the office of destination is subject with the total charges relating to answers prepaid. With respect to the telegraph rates and the charges relating to special delivery or delivery by mail, and to additional copies, the procedure shall be as prescribed in the Telegraph Regulations, the coastal station being considered as the telegraph office of origin.

For radiograms intended for a country lying beyond the country to which the coastal station belongs, the telegraph charges to be liquidated in conformity with the above provisions shall be those which result either from tables "A" and "B" annexed to the International Telegraph

Regulations, or from special arrangements concluded between the radio managements of adjacent countries and published by such managements, and not the charges which might be collected in accordance with the special provisions of Articles XXIII, par. 1, and Article XXVII, par. 1, of the Telegraph Regulations.

For radiograms and paid service notices intended for ships, the radio management to which the office of origin is subject shall be charged directly by that to which the coastal station is subject with the coastal and shipboard rates. However, the total charges relating to answers prepaid shall be credited, if there is occasion, from country to country, through the channel of the telegraph accounts, until they reach the radio management to which the coastal station is subject. As regards the telegraph charges and the charges relating to delivery by mail and additional copies, the procedure shall be as prescribed in the Telegraph Regulations. The radio management to which the coastal station is subject shall credit that to which the ship of destination is subject with the shipboard rate, if there is occasion, with the rates accruing to the intermediary shipboard stations, the total charge collected for answers prepaid, the shipboard rates for repetition of message (for purposes of verification), and the charges collected for the preparation of additional copies and for delivery by mail.

Paid service notices and answers prepaid shall be treated in the radio accounts in all respects the same as other radiograms.

For radiograms transmitted by means of one or two intermediary stations on shipboard, each one of such stations shall charge the shipboard station of origin, in the case of a radiogram proceeding from a ship, or that of destination, in the case of a radiogram intended for a ship, with the shipboard rate accruing to it for transit.

4. In general, the liquidation of accounts relating to correspondence between stations on shipboard shall be effected directly between the companies working such stations, the station of origin being charged by the station of destination.

5. The monthly accounts serving as a basis for the special accounts of radiograms shall be made out for each radiogram separately with all the necessary data within a period of six months from the month to which they refer.

6. The Governments reserve the right to enter into special agreements among themselves and with private companies (parties operating radio stations, shipping companies, etc.) with a view of adopting other provisions with regard to accounts.

12. INTERNATIONAL BUREAU.

ARTICLE XLIII.

Expenses of Berne bureau.

The additional expenses resulting from the work of the International Bureau so far as radio telegraphy is concerned shall not exceed 80,000 francs a year, exclusive of the special expenses arising from the convening of the International Conference.

The managements of the radio service of the contracting states shall, so far as contribution to the expenses is concerned, be divided into six classes, as follows:

1st Class:

Union of South Africa; Germany, United States of America; Alaska; Hawaii and the other American possessions in Polynesia; Philippine Islands; Porto Rico and the American possessions in the Antilles; Panama Canal Zone; Argentine Republic; Australia; Austria; Brazil; Canada; France; Great Britain; Hungary; British India; Italy; Japan; New Zealand; Russia; Turkey.

2nd Class:

Spain.

3rd Class:

Russian Central Asia (littoral of the Caspian Sea); Belgium; Chile, Chosen, Formosa, Japanese Sakhalin and the leased territory of Kwantung; Dutch Indies; Norway; Netherlands; Portugal; Roumania; Western Siberia (littoral of the Arctic Ocean); Eastern Siberia (littoral of the Pacific Ocean;) Sweden.

4th Class:

German East Africa; German Southwest Africa; Kamerun; Togo Land; German Protectorates in the Pacific; Denmark; Egypt; Indo-China; Mexico; Siam; Uruguay.

5th Class:

French West Africa; Bosnia-Herzegovina; Bulgaria; Greece; Madagascar; Tunis.

6th class:

French Equatorial Africa; Portuguese West Africa; Portuguese East Africa and the Portuguese possessions in Asia; Bokhara; Belgian Congo; Colony of Curacao; Spanish Colony of the Gulf of Guinea; Eritrea; Khiva; Morocco; Monaco; Persia; San Marino; Italian Somaliland.

ARTICLE XLIV.

Berne list.

The management of the radio service of the different countries shall forward to the International Bureau a table in conformity with the annexed blank, containing the data enumerated in said table for stations such as referred to in Article V of the Regulations. Changes occurring and additional data shall be forwarded by the radio managements to the International Bureau between the 1st and 10th day of each month. With the aid of such data the International Bureau shall draw up the list provided for in Article V. The list shall be distributed to the radio managements concerned. The list and the supplements thereto may also be sold to the public at the cost price.

The International Bureau shall see to it that the same call letters for several radio stations shall not be adopted.

13. METEOROLOGICAL RADIOGRAMS, TIME SIGNALS AND OTHER RADIOGRAMS.

ARTICLE XLV.

1. The managements of the radio service shall take the necessary steps to supply their coastal stations with meteorological radiograms containing indications concerning the district of such stations. Such radiograms, the text of which shall not exceed 20 words, shall be transmitted to ships upon request. The rate for such meteorological radiograms shall be carried to the account of the ships to which they are addressed.

2. Meteorological observations made by certain vessels designated for this purpose by the country to which they are subject, may be transmitted once a day, as paid service notices, to the coastal stations authorized to receive the same by the managements concerned, who shall likewise designate the meteorological offices to which such observations shall be addressed by the coastal stations.

Time signals.

Interference.

3. Time signals and meteorological radiograms shall be transmitted one after the other in such a way that the total time occupied in their transmission shall not exceed ten minutes. As a general rule, all radio stations whose transmissions might interfere with the reception of such signals and radiograms, shall remain silent during their transmission in order that all stations desiring it may be able to receive the same. Exception shall be made in cases of distress calls and of state telegrams.

4. The managements of the radio service shall give to agencies of maritime information such data regarding losses and casualties at sea or other information of general interest to navigation, as the coastal stations may properly report.

14. MISCELLANEOUS PROVISIONS.

ARTICLE XLVI.

Ship to ship business.

The exchange of correspondence between shipboard stations shall be carried on in such a manner as not to interfere with the service of the coastal stations, the latter, as a general rule being accorded the right of priority for the public service.

ARTICLE XLVII.

Relaying.

Coastal stations and stations on shipboard shall not be bound to participate in the retransmission of radiograms except in cases where direct communication cannot be established between the stations of origin and destination.

The number of such retransmissions shall, however, be limited to two.

In the case of radiograms intended for the coast, retransmission shall take place only for the purpose of reaching the nearest coastal station.

Retransmission shall in every case be subject to the condition that the intermediate station which receives the radiogram in transit is in a position to forward it.

ARTICLE XLVIII.

If the route of a radiogram is partly over telegraph lines, or through radio stations subject to a non-contracting Government, such radiograms may be transmitted provided the management of the radio service to which such lines or stations are subject have declared that, if the occasion should arise, they will comply with such provisions of the Convention and of the Regulations as are indispensable to the regular transmission of radiograms and that the payment of charges is insured. Such declaration shall be made to the International Bureau and communicated to the offices of the Telegraph Union.

ARTICLE XLIX.

Modifications of the present regulations which may be rendered necessary in consequence of the decisions of subsequent Telegraph Conferences shall go into effect on the date fixed for the application of the provisions adopted by each one of such conferences.

ARTICLE L.

Telegraph regulations.
See telegraph regs.

The provisions of the International Telegraph Regulations shall be applicable analogously to radio correspondence in so far as they are not contrary to the provisions of the present regulations. The following provisions of the Telegraph Regulations, in particular, shall be applicable to radio correspondence: Article XXVII, paragraphs 3 to 6, relating to the collection of charges; Articles XXVI and XLI relating to the indication of the route to be followed; Article LXXV, paragraph 1, LXXVIII, paragraphs 2 to 4, and LXXIX, paragraphs 2 and 4, relating to the preparation of accounts. However:-(l) The period of six months provided by paragraph 2 of Article LXXIX of the Telegraph Regulations for the verification of accounts shall be extended to nine months in the case of radiograms; (2) The provisions of Article XVI, paragraph 2, shall not be considered as authorizing gratuitous transmission, through radio stations, of service telegrams relating exclusively to the telegraph service, nor free transmission over the telegraph lines of service telegrams relating exclusively to the radio service; (3) The provisions of Article LXXIX, paragraphs 3 and 5, shall not be applicable to radio accounts. As regards the application of the provisions of the Telegraph Regulations, coastal stations shall be considered as offices of transit except when the Radio Regulations expressly stipulate that such stations shall be considered as offices of origin or of destination.

In conformity with Article 11 of the Convention of London, the present Regulations shall go into effect on the first day of July, 1913.

In witness whereof the respective plenipotentiaries have signed one copy of these Regulations, which shall be deposited in the archives of the British Government, and a copy of which shall be transmitted to each of the Parties.

(SUPPLEMENT TO ARTICLE XLIV OF THE REGULATIONS.)

Radio Management of ------. Service Particulars of Radio Stations.

- (a) COASTAL STATIONS.
    - Name.
    - Nationality.
    - Geographic location: E. East longitude. O. West longitude. N. North latitude. S. South latitude. Territorial subdivisions.
    - Call letters.
    - Normal range in nautical miles.
    - Radio system with the characteristics of the transmitting system.
    - Wave lengths in meters (the normal wave length to be underscored.)
    - Nature of service furnished.
    - Hours during which station is open (local standard time).
    - Coastal rate, per word in francs, minimum rate per radiogram, in francs.
    - Remarks. (When necessary hour and manner of sending time signals and meteorological radiograms.)

- (b) SHIPBOARD STATIONS.
    - Name.
    - Nationality.
    - Call letters.
    - Normal range. In nautical miles.
    - Radio system with the characteristics of the transmitting system.
    - Wave lengths in meters.
    - Nature of service furnished.
    - Hours during which the station is open.
    - Shipboard rate per word in francs, minimum rate per radiogram in francs (1)War vessels (2) Merchant vessels.
    - Remarks. (When necessary name and address of the party working the station.)

(SUPPLEMENT TO ARTICLE XXII OF THE REGULATIONS.)

List of Abbreviations to be used in Radio Communications.

Abbreviation.	Question.	Answer or Notice.
C Q	-.-. --.-	Signal of enquiry made by a station desiring to communicate.
T R	- .-.	Signal announcing the sending of particulars concerning a station on shipboard (Art. XXII).
(!)	--..--	Signal indicating that a station is about to send at high power.
PRB	Do you wish to communicate by means of the International Signal Code?	I wish to communicate by means of the International Signal Code.
QRA	What ship or coast station is that?	This is ____.
QRB	What is your distance?	My distance is ____.
QRC	What is your true bearing?	My true bearing is ____ degrees.
QRD	Where are you bound for?	I am bound for ____.
QRF	Where are you bound from?	I am bound from ____.
QRG	What line do you belong to?	I belong to the ____ Line.
QRH	What is your wave length in meters?	My wave length is ____ meters.
QRJ	How many words have you to send?	I have ____ words to send.
QRK	How do you receive me?	I am receiving well.
QRL	Are you receiving badly? Shall I sent 20 . . . -. for adjustment?	I am receiving badly. Send 20 . . . -. for adjustment.
QRM	Are you being interfered with?	I am being interfered with.
QRN	Are the atmospherics strong?	Atmospherics are very strong.
QRO	Shall I increase power?	Increase power.
QRP	Shall I decrease power?	Decrease power.
QRQ	Shall I send faster?	Send faster.
QRS	Shall I send slower?	Send slower.
QRT	Shall I stop sending?	Stop sending.
QRU	Have you anything for me?	I have nothing for you.
QRV	Are you ready?	I am ready. All right now.
QRW	Are you busy?	I am busy. (or, I am busy with ___). Please do not interfere.
QRX	Shall I stand by?	Stand by. I will call you when required.
QRY	When will be my turn?	Your turn will be No. ___.

QRZ	Are my signals weak?	Your signals are weak.
QSA	Are my signals strong?	Your signals are strong.
QSB	Is my tone bad? Is my spark bad?	The tone is bad. The spark is bad.
QSC	Is my spacing bad?	Your spacing is bad.
QSD	What is your time?	My time is ___.
QSF	Is transmission to be in alternate order or in series?	Transmission will be in alternate order.
QSG		Transmission will be in series of 5 messages.
QSH		Transmission will be in series of 10 messages.
QSJ	What rate should I collect for ___?	Collect ___.
QSK	Is the last radiogram canceled?	The last radiogram is canceled.
QSL	Did you get my receipt?	Please acknowledge.
QSM	What is your true course?	My true course is ___ degrees.
QSN	Are you in communication with land?	I am not in communication with land.
QSO	Are you in communication with any ship or station (or: with ___)?	I am in communication with ___ (through ___).
QSP	Shall I inform ___ that you are calling him?	Inform ___ that I am calling him.
QSQ	Is ___ calling me?	You are being called by ___.
QSR	Will you forward the radiogram?	I will forward the radiogram.
QST	Have you received the general call?	General call to all stations.
QSU	Please call me when you have finished (or: at ___ o'clock)?	Will call when I have finished.
QSV (1)	Is public correspondence being handled?	Public correspondence is being handled. Please do not interfere.
QSW	Shall I increase my spark frequency?	Increase your spark frequency.
QSX	Shall I decrease my spark frequency?	Decrease your spark frequency.
QSY	Shall I send on a wave length of ___ meters?	Let us change to the wave length of ___ meters.

(1) Public correspondence is any radio work, official or private, handled on commercial wave lengths.

When an abbreviation is followed by a mark of interrogation, it refers to the question indicated for that abbreviation.

EXAMPLES.

Station.		
A	Q R A?	What is the name of your station?
B	Q R A Campania	This is the Campania.
A	Q R G?	To what line do you belong?
B	Q R G Cunard Q R Z	I belong to the Cunard Line. Your signals are weak.

Station A then increases the power of its transmitter and sends:

A	Q R K?	How are you receiving?
B	Q R K	I am receiving well.
	Q R B 80	The distance between our stations is 80 nautical miles.
	Q R C 62	My true bearing is 62 degrees, etc.

EXTRACT FROM THE INTERNATIONAL TELEGRAPH CONVENTION, SIGNED AT ST. PETERSBURG, JULY 10-22, 1875.

[See Article 17 of the convention, p. 20.]

ARTICLE 1. The High Contracting Parties concede to all persons the right to correspond by means of the international telegraphs.

ARTICLE 2. They bind themselves to take all the necessary measures for the purpose of insuring the secrecy of the correspondence and its safe transmission.

ARTICLE 3. They declare, nevertheless, that they accept no responsibility as regards the international telegraph service.

ARTICLE 5. Telegrams are classed in three categories:

1. State telegrams: those emanating from the Head of the Nation, the Ministers, the Commanders-in-Chief of the Army and Naval forces, and the Diplomatic or Consular Agents of the Contracting Governments, as well as the answers to such telegrams.

2. Service telegrams: those which emanate from the Managements of the Telegraph Service of the Contracting States and which relate either to the international telegraph service or to subjects of public interest determined jointly by such Managements.

3. Private telegrams.

In the transmission, the State telegrams shall have precedence over other telegrams.

ARTICLE 6. State telegrams and service telegrams may be issued in secret language, in any communications.

Private telegrams may be exchanged in secret language between two States which admit of this mode of correspondence.

The States which do not admit of private telegrams in secret language upon the expedition or arrival of the same, shall allow them to pass in transit, except in the case of suspension defined in article 8.

ARTICLE 7. The High Contracting Parties reserve the right to stop the transmission of any private telegram which may appear dangerous to the safety of the State, or which may be contrary to the laws of the country, to public order or good morals.

ARTICLE 8. Each Government also reserves the right to suspend the international telegraph service for an indefinite period, if deemed necessary by it, either generally, or only over certain lines and for certain classes of correspondence, of which such Government shall immediately notify all the other Contracting Governments.

ARTICLE 11. Telegrams relating to the international telegraph service of the Contracting States shall be transmitted free of charge over the entire systems of such States.

ARTICLE 12. The High Contracting Parties shall render accounts to one another of the charges collected by each of them.

ARTICLE 17. The High Contracting Parties reserve respectively the right to enter among themselves into special arrangements of any kind with regard to points of the service which do not interest the States generally.

Part II.--REGULATIONS GOVERNING SHIP AND LAND RADIO STATIONS.

SHIP STATIONS.

Emergency apparatus.

1. On vessels coming under the ship acts, an emergency power supply, independent of the vessel's main electric power plant, must be provided which will enable radio messages to be sent for at least four hours over a distance of at least 100 miles day or night. The emergency power supply and equipment should be located and installed in such manner as to afford maximum protection against accident.

2. The radio transmitting apparatus, operated from the emergency power supply, should be capable of functioning within two minutes after unexpected notice to the operator.

3. The complete equipment must be maintained in an efficient condition at sea.

4. The complete emergency equipment should be tested before each sailing and daily at sea by the operator or an inspector and a note of its performance entered in the radio log.

5. Radio inspectors or other duly authorized officers of the Government will occasionally call for test messages, to be sent by means of the emergency apparatus, while the vessel is at sea.

6. An "induction coil" connected to "plain aerial" is not recommended as emergency apparatus, on account of the high voltages produced which frequently damage the antenna insulation and on account of "vibrator troubles."

7. A motor generator or rotary converter operated by storage battery is probably the most satisfactory means available at present of energizing the transmitting apparatus.

8. Any auxiliary engine for wireless purposes must operate on a fuel which will fulfill the requirements of Rule XI, section 5, of the General Rules and Regulations of the Steamboat-Inspection Service, reading as follows:

> None of the inflammable articles specified in section 4472, Revised Statutes, or oil that will not stand a fire test of 300° F. shall be used as stores on any pleasure steamer or steamer carrying passengers except that vessels not carrying passengers for hire may transport gasoline or any of the products of petroleum for use as a source of motive power for motor boats or launches of such vessels. (Sec. 4472, R. S.)

Spare parts and repairs.

9. Every ship station shall carry a reasonable number of spares of such parts of both the main and emergency radiotelegraph equipments as are subject to undue wear, deterioration, or liability to accident.

10. One extra pair of head telephones, extra cords, and extra detectors must always be kept on hand.

11. A storage battery voltmeter, hydrometer, a supply of electrolyte, and distilled water should be a part of the regular equipment, but are not prescribed in terms by statute. The absence of these and similar inexpensive emergency articles will be brought to the attention of the master and of the company installing the apparatus by the radio inspector, in writing, and if after a reasonable interval they have not been supplied, the inspector will communicate the fact to the Commissioner of Navigation.

Power available.

12. The vessel's electric power for the operation of the main equipment shall, at all times while the steamer is under way, be available for the radio operator's use. On steamers where the dynamo is not run continuously there should be an efficient means of communication between the radio room and the dynamo room, in order that the radio operator may signal for power, as the law provides that he may not leave his post of duty.

Communication between radio room and bridge.

13. Efficient communication between the radio room and the bridge must be maintained. A speaking tube or telephone will comply with this requirement. A bell and messenger service will not be acceptable unle>

Transfer interrupted!

fying this equipment. The speaking tube or telephone must terminate in the radio room and on the bridge, or in the chart room if readily accessible from the bridge. If the radio room is adjacent to or accessible from the bridge so that orders may be transferred direct, no means of communication will be required. Any arrangement calling for the services of a third person to transmit the message will not be satisfactory. The radio inspectors will notify the ship authorities whether the means of communication provided is satisfactory at the time of inspection.

Continuous watch.

14. On vessels of the United States it is the statutory duty of the master to see that one operator is on duty at all times. The radio service of the ship is under the supreme authority of the master.

15. Masters should require operators on duty to communicate with the officer on the bridge every half hour.

16. Operators must make entries on the radio log *every 15* minutes, as evidence that a continuous watch is being maintained. The entries must, if possible, consist of the call letters of other stations communicating and a few words of the intercepted messages.

Vessels in port.

17. When vessels are in port the key to the radio room must at all times be on board in charge of the proper officer and the radio equipment shall be in such condition as to facilitate Government inspection.

CLASSIFICATION OF SHIP STATIONS AND GRADES OF OPERATORS REQUIRED.

First class.

18. First Class: Vessels having a continuous service. There shall be placed in the first-class vessels which are intended to carry 25 or more passengers--(1) If they have an average speed in service of 15 knots or more; (2) if they have average speed in service of more than 13 knots, but only subject to the twofold condition that they have on board 200 persons or more (passengers and crew), and that, in the course of their voyage, they go a distance of more than 500 sea miles between any two consecutive ports.

Second class.

19. Second Class: Vessels having a continuous *watch* but a *service* of limited duration.

Other vessels placed in the second class *must*, during navigation, maintain a continuous *watch* for at least seven hours a day, and a *watch* of ten minutes at the beginning of every other hour.

Third class.

20. Third Class: Vessels which have no fixed periods of service. All vessels which are placed neither in the first nor in the second class shall be placed in the third class.

Service and operators required.

21. *Service* may be defined as preparedness to transmit and receive radio messages or signals at the rate of at least 20 words per minute.

22. *Watch* may be defined as preparedness to receive distress signals and call letters slowly. A "watcher" or cargo-grade operator or will summon a first or second class operator if necessary.

23. All American vessels required by the act of July 23, 1912, to be equipped with radio apparatus, and operators *must* at all hours maintain a continuous *watch*; that is to say, an operator or *watcher* must be "listening in" continuously. This requirement is outside of and above the requirement based on the classification under which the ship's station is licensed.

24. Vessels voluntarily equipped are not required to maintain this continuous *watch*. Vessels voluntarily equipped are, however, subject to the following requirements as to *watch* according to the class assigned to them in their station licenses.

25. If a license of the second class be issued to a voluntarily equipped vessel, the station *must* maintain a continuous *watch* for at least seven hours a day and a *watch* of ten minutes at the beginning of every hour.

26. The grade of operators required on vessels of each class are prescribed in the London Convention Service Regulations, Article X. A continuous *watch* may be maintained by one commercial second-grade operator and one cargo-grade operator on cargo steamers.

27. Passenger vessels coming under the act of July 23, 1912, which carry or are licensed to carry 25 or more passengers, *must* be placed in the first class: "(*a*) If they have an average speed in service of 15 knots or more; (*b*) if they have an average speed in service of more than 13 knots, but only subject to the twofold condition that they have on board 200 persons or more (passengers and crew), and that in the course of their voyage they go distance of more than 500 sea miles between any two consecutive ports." The *service* shall be carried on by at least two commercial first-grade operators.

28. Cargo vessels coming under the act of July 23, 1912, which are required to maintain a continuous *watch*, *must* be placed in the second class if continuous *service* is not maintained. On cargo steamers a continuous *watch* may be maintained by at least one commercial second-grade operator and one cargo-grade operator.

29. Passenger vessels coming under the act of July 23, 1912, but which are not *required* to be entered in the first class, *may* be entered in the first or second class, according to whether continuous *service* or continuous *watch* is maintained. The number and grade of operators required is determined by *service* or *watch*. On passenger vessels coming under the ship act but entered in the second class at least two second-grade operators are required to maintain continuous watch.

30. Cargo vessels which come under the act of July 23, 1912, and are required to maintain a continuous *watch*, may be placed in the first class, if continuous *service* is maintained. (For operators, see par. 28.)

31. All vessels voluntarily equipped with radio apparatus and which have no specified hours of *service* or *watch* must be placed in the third class.

32. Any vessel voluntarily equipped may be placed in the first class if continuous *service* is maintained, or in the second class if a continuous *watch*, or a watch of limited duration, such as specified above for vessels of the second class, is maintained.

33. In all ship stations transmissions shall be made only by operators holding commercial first or second grade licenses or higher.

34. Continuous *service* shall be maintained by not lower than commercial first-grade operators.

35. Vessels which are voluntarily equipped with radio apparatus for their own convenience and for the correspondence of officers and crew must employ at least one commercial second-grade operator or higher.

36. Radio telephone apparatus on vessels not coming under the act of July 23, 1912, must be operated by a person holding a cargo-grade license or higher.

37. The owners of ship stations desiring to change the classification of a ship must apply

for a new license.

LAND STATIONS.

Coast station, definition of.

38. Coast stations are stations which transmit messages to vessels at sea or on the Great Lakes, or whose operations can interfere with the exchange of messages between ship and ship or ship and coast. The principal purpose of the regulation of radio communication, international and national, is to secure the greatest efficiency of maritime communication through this agency, especially as a means of promoting safety to life.

Inland stations, definition of.

39. Inland stations are stations which can not transmit messages to vessels at sea or on the Great Lakes and whose operations can not affect the transmission of messages between ship and ship or ship and coast. This may be due to their geographical location or to their range, dependent on power and aerial, or conditions. In some instances actual inspection may be necessary to determine whether a station should be licensed as a coast station or an inland station. An operator or owner in doubt as to the classification of his station should communicate the facts to the radio inspector of his district when applying for a license.

Wave lengths, distress signals.

40. Stations are bound to give absolute priority to calls of distress from ships, to similarly answer such calls, and to take such action with regard thereto as may be required.

41. The working of stations shall be organized as far as possible in such manner as not to disturb the service of other stations.

42. All coast stations (par. 38), excepting general and restricted amateur stations, are required to be able to transmit on the wave lengths of 300 and 600 meters for the purpose of transmitting or relaying distress messages or signals and messages relating thereto, if necessary.

43. Coast stations primarily intended for long waves and long-distance transmission may install an auxiliary antenna and auxiliary transmitter to comply with the short wave length requirements.

44. The international standard wave length is *600* meters, and the operators of all *coast stations* are required, during the hours the station is in operation, to "listen in" at intervals of not less than 15 minutes and for a period not less than 2 minutes, with the receiving apparatus tuned to receive this wave length, for the purpose of determining if any distress signals or messages are being sent and to determine if the transmitting operations of the "listening station" are causing interference with other radio communication.

General public service.

45. General public service may be defined as "paid business," conducted on commercial wave lengths between ship and shore or ship and ship.

46. Limited public service may be defined as "paid business" between certain designated land stations, ships or lines of ships, and must be conducted on some authorized wave length other than 300 or 600 meters.

47. All special service must be conducted on some authorized wave length other than 300 or 600 meters, not interfering with general public service.

48. Limited commercial, special amateur, and all stations which have no authorized rates, shall not transmit or accept public correspondence from other stations, except in case of emergency.

49. If a general public-service coast station also maintains a limited commercial service with other stations on land or with vessels at sea, the limited commercial service must be conducted on some authorized wave length other than 300 or 600 meters, but this service can be authorized on a general public-service coast station license without stating the specific hours, it being understood that the limited commercial service is conducted only when no general public service business is on file.

50. If a general public-service coast station also maintains a public service between fixed points on land, the service between the land stations must be conducted on some authorized wave length other than 300 or 600 meters, and a separate form, No. 761, should be submitted covering "Limited public service," giving the exact hours of such service.

CLASSIFICATION OF LAND STATIONS AND GRADES OF OPERATORS REQUIRED.

Classes.

51. Both coast stations (the words "coast stations," "shore stations," and "coastal stations" are used interchangeably) and inland stations are divided for the purposes of the administration of the act into the following classes: (1) Public-service stations, (*a*) general,

(*b*) limited; (2) limited commercial stations; (3) experiment stations for the development of radio communication; (4) technical and training school stations; (5) special amateur stations; (6) general amateur stations; (7) restricted amateur stations.

Service and operators required.
General Public.

52. Class 1.--(*a*) *Public-service stations, general*, are those open to general business between coast and ships and include those operated by common carriers under the act of February 4, 1887, to regulate commerce, amended June 18, 1910. They are required to maintain a constant *service* when open. Every coastal station open to public service shall at all times be ready to receive messages of such wave lengths as are required by the international convention in force. (Sec. 4, first regulation, act of Aug. 13, 1912.) The station rates are authorized in the license and published in the Official Berne List. Whenever such stations do not insure a constant service, transmitting and receiving day and night without interruption, the Secretary of the Navy is directed to open naval radio stations within 100 miles thereof to public business. (Sec. 4, eighteenth regulation, act of Aug. 13, 1912.) The Secretary of War, is authorized by the act of May 26, 1900 (31 Stat., 206), to open Alaskan military stations to public service.

53. General public service shall be conducted only by operators holding commercial first-grade licenses or higher.

Limited public.

54. Class 1.--(*b*) *Public service stations, limited*, are reserved for a limited public service, determined by the object of the correspondence or other circumstances independent of the system employed. Stations of this class transmit and receive public messages to and from certain stations only, which are designated in the license. The rates are authorized in the licenses, and if not published in the official list they may be obtained from the licensee.

55. The service of limited public service *coast* stations shall be carried on by commercial first-grade operators or higher.

56. The service of limited public service *inland* stations shall be carried on by commercial second-grade operators or higher.

Limited commercial.

57. Class 2.--*Limited commercial stations* are not open to public service and are licensed for a specific commercial service or services defined in the license. Stations of this class must not transmit to or accept public messages from other stations. No rates are authorized.

58. If a coast station, the operators shall hold a commercial second-grade license or higher. (Par. 57.)

Experimental.

59. Class 3.--*Experiment stations*.--The Secretary of Commerce is authorized by section 4 of the act to grant, special temporary licenses "to stations actually engaged in conducting experiments for the development of the science of radio communication, or the apparatus pertaining thereto, to carry on special tests, using any amount of power or any wave lengths, at such hours and under such conditions as will insure the least interference with the sending or receipt of commercial or Government radiograms, of distress signals and radiograms, or with the work of other stations." Applicants for such licenses should state any technical result they have already produced, their technical attainments, etc. The fact that an applicant desires to experiment with his equipment does not justify or require a license of this class. Most experiments can be made within the limitations of general and restricted amateur station licenses or by use of an artificial antenna to prevent radiation.

60. Experiment stations may be operated by a person holding an experiment and instruction grade license or higher.

Technical.

61. Class 4.--*Technical and training-school stations* will be licensed, according to the degree of technical training attained and imparted and to local conditions.

62. The grade of operators required will be specified when the license is issued.

Special amateur.

63. Class 5.--*Special amateur stations* may be licensed by the Secretary of Commerce to use a longer wave length and a higher power on special application. Applications for this class from amateurs with less than two years' experience in actual radio communication will not be approved. The application must state the experience and purpose of the applicant, the local conditions of radio communication, especially of maritime radio communications in the vicinity of the station, and a special license will be granted only if some substantial benefit to the art or to commerce apart from individual amusement seems probable. (Sec. 4, fifteenth regulation, act of Aug. 13, 1012.)

64. Special amateur *coast* stations must be operated by a person holding a commercial second-class license or higher. Inland stations may be operated by persons holding amateur second-grade licenses or higher.

General amateur.

65. Class 6.--*General amateur stations* are restricted to a transmitting wave length not

exceeding 200 meters and a transformer input not exceeding 1 kilowatt. (Sec. 4, fifteenth regulation, act of Aug. 13, 1912.)

Restricted amateur.

66. CLASS 7.--*Restricted amateur stations*, within 5 nautical miles of a naval or military station, are restricted to a wave length not exceeding 200 meters and to a transformer input not exceeding one-half kilowatt. (Sec. 4, sixteenth regulation, act of Aug. 13, 1912.)

67. Amateur first or second grade operators or higher are required for general and restricted amateur stations.

68. The license does not specify the number of operators required, but provides that the station shall at all times while in operation be under the care of an operator licensed for that purpose. The grade and number of operators as required by law are determined by the service of the station.

Special stations.

69. *Special stations for exceptional distances* are land stations designed to carry on transoceanic radio communication as between the United States and European countries, or between the Pacific coast and Hawaii, or from the United States over similar long distances at sea to another land station, or (inland) to carry on radio communication overland over exceptional distances. These stations will all come under one of the classifications named above, and the license will indicate the stations for which communication is authorized and indicate the range.

REGULATIONS COMMON TO LAND AND SHIP STATIONS.

Changes.

70. Any change in the characteristics of the radio apparatus or service of the station must be authorized by the Secretary of Commerce.

Official list.

71. Every land and ship station open to general public service shall have, as a part of the station equipment, a copy of the Official Berne List of Radiotelegraph Stations and supplements thereto, as issued to comply with section 2 of the act of July 24, 1910. Information concerning the use of this list and method of procuring it is given on page 72, paragraph 196.

Reduction of power.

72. The service regulations of the London convention, Article VII, paragraphs 1 and 2b, require a reduction of power or range under certain conditions. A proper resistance, impedance coil, or reactance regulator in the primary circuit is recommended. In certain cases the reduction of voltage or decreasing of coupling may be approved upon recommendations of radio inspectors.

Stations out of commission.

73. Persons or corporations holding licenses for radio stations, either land or ship, should, if practicable, submit the license to the radio inspector for the district, whenever the station or vessel goes out of commission for a period exceeding three months. The Commissioner of Navigation should be notified promptly of any intention to suspend or discontinue the service of any commercial station.

74. If there is no intention to resume the same service or if the station or vessel will enter a different service from that indicated by the license, the radio inspector will submit the license to the Bureau, together with a statement of the facts, so that the license may be amended. Otherwise the radio inspector may retain the license in his files for safekeeping until the date of it expiration, when it will be forwarded to the Bureau for cancellation.

75. When the station goes into commission the owner may apply to the radio inspector for the return of the license. The radio inspector will satisfy himself that the station corresponds to the schedule of the station as shown in the license, and if so, the license will be returned.

Testing.

76. Stations desiring to conduct tests should communicate with the radio inspector by letter or telephone, stating the probable length of time that will be required. Stations conducting such tests or temporary experiments should "listen in," to determine that no interference is being caused, and during the tests should "listen in" frequently for the interference signal, "Q R M." Stations conducting tests should transmit their official call signal frequently. Attention is invited to the act of August 13, 1912, section 5:

> That every license granted under the provisions of this act for the operation or use of apparatus for radio communication shall prescribe that the operator thereof shall not willfully or maliciously interfere with any other radio communication. Such interference shall be deemed a misdemeanor, and upon a conviction thereof the owner or operator, or both, shall be punishable by a fine not to exceed five hundred dollars or imprisonment for not to exceed one year, or both.

77. The Department holds that interference caused by tests of the character described above (par. 76) is "willful" when no "listening in" precautions are taken and the call signal of the station sending is not repeated at intervals.

APPLICATIONS FOR SHIP AND LAND STATION LICENSES, RENEWALS, AND DUPLICATES.

Apparatus exempt from license.

78. The act does not apply either afloat or ashore to--(*a*) Apparatus for radio communication which merely receives radiograms and is not equipped for sending; (*b*) apparatus for the transmission of radiograms exclusively between points in the same State, if the effect of such transmission does not extend beyond the State (so as to interfere with the radio communication of other States), or if the effect of such transmission does not interfere with the reception of radiograms from beyond the State (so as to interfere with the interstate radio communication of that State); (*c*) apparatus for radio communication which has been issued to the Organized Militia by the War Department or to the Naval Militia by the Navy Department and is used for official purposes only.

79. The owner or operator of any apparatus who may be in doubt whether his apparatus, under this paragraph, is exempt from license may write the facts to the radio inspector for his district before applying for a license.

Ship stations.

80. The apparatus for transmission of radiograms, or signals on any vessel of the United States not permanently moored, requires a license.

Land stations.

81. Apparatus for radio communication on land within the jurisdiction of the United States (excluding the Philippine Islands and excluding apparatus of the Government of the United States) must be licensed if--(*a*) the apparatus is a means of commercial intercourse among the several States or with foreign nations; or (*b*) the apparatus transmits radiograms or signals the effect of which at any time extends beyond the State; or (*c*) the apparatus interferes with the receipt of messages in any State from beyond such State.

Applications for licenses.

82. Station licenses for the use and operation of apparatus for radio communication under the act may be issued only to citizens of the United States or Porto Rico or to a company incorporated under the laws of some State or Territory or of the United States or Porto Rico.

83. Licenses can be issued to clubs if they are incorporated or if a member will accept the responsibility for the operation of the apparatus, carrying with it the possibility of being penalized for infraction of the laws.

84. Applications for station licenses of all classes should be addressed to the United States Radio Inspector for the district in which the station is located, who will forward the necessary blank forms and information. The limits of the districts and addresses of, radio inspectors are given on page 68, paragraph 166.

85. Upon receipt of the forms, properly completed, the radio inspector will make a thorough inspection of the station if practicable.

86. When applications and forms have been properly submitted, the stations may be operated in accordance with the laws and regulations governing the class of station for which application for license has been made, until such time as the application can be acted upon unless the applicant is otherwise instructed and provided temporary official call letters are assigned.

87. General and restricted amateur-station license are issued directly by radio inspectors. Station licenses of all other classes are issued from the office of the Commissioner of Navigation, Department of Commerce. Applications and forms are forwarded by radio inspectors with recommendations by them.

88. Stations desiring to operate different portions of the day under different classifications shall submit application for each service, giving exact hours for each. If approved, each classification will be specified in the license.

Amateur applications.

89. The owner of an amateur station may operate his station in accordance with the laws if his application for a license has been properly filed but has not been acted upon. An application for an operator's license must also have been filed and every effort made to obtain the license before the station may be operated.

90. "Provisional" station licenses are issued to amateurs remote from the headquarters of the radio inspector of the district in which the station is located. These licenses are issued as a matter of convenience and record. If, upon inspection, the station is found to comply with the law, the inspector will strike out the word "Provisional" and insert the date of inspection and his signature at the bottom of the license.

91. If such a station is found not to comply with the law the provisional license may be canceled until such time as the apparatus is readjusted to meet the requirements of the law: *Provided, however,* That consideration will be given to any reports of interference filed

against such a station

Renewals of station licenses.

92. All persons are warned that it is unlawful to operate stations after licenses have expired unless application for renewal has been properly made.

93. Owners desiring to renew licenses must complete new forms as prescribed for original applications. Amateur-station licenses issued on current forms may be renewed by the following indorsement on the back, provided no changes in equipment or location have been made; otherwise a new license will be issued: "This license renewed for one year. ______ ______, Radio Inspector." The Commissioner of Navigation will be notified of the name and call signal in every case of renewal in this manner.

Duplicates of station licenses.

94. Any person applying for a duplicate license to replace an original which has been lost, mutilated or destroyed will be required to submit an affidavit to the Bureau of Navigation through the radio inspector of the district, attesting the facts regarding the manner in which the original was lost. The Commissioner of Navigation will consider the facts in the case and advise the radio inspector in regard to the issue of a duplicate license, or a duplicate will be forwarded through the inspector's office.

95. A duplicate license will be issued under the same serial number as the original and will be marked "Duplicate" in red across the face.

Part III.--REGULATIONS GOVERNING RADIO OPERATORS.

GRADES AND REQUIREMENTS.

Grades.

96. (1) Commercial extra first grade; (2) commercial first grade; (3) commercial second grade; (4) commercial cargo grade; (5) commercial temporary permit; (6) experiment and instruction grade; (7) amateur first grade; (8) amateur second grade.

General requirements.

97. The Service Regulations of the International Convention require that "the service of the station on shipboard shall be carried on by a telegraph operator holding a certificate issued by the Government to which the vessel is subject."

98. Such certificate shall attest the professional efficiency of the operator as regards--(*a*) Adjustment of the apparatus and knowledge of its functioning; (*b*) transmission and acoustic reception at the rate of not less than 20 words a minute (Continental Morse) for commercial first-grade operators and not less than 12 words per minute for second-grade operators; (*c*) knowledge of the regulations governing the exchange of wireless telegraph correspondence; (*d*) the certificate shall furthermore state that the Government has bound the operator to secrecy with regard to the correspondence.

99. The International Convention has been ratified by the principal maritime nations, dominions, and provinces. Radio operators holding valid certificates issued by foreign Governments which are parties to the convention will be recognized by this Department as persons "skilled in the use of such apparatus" within the meaning of the act, unless in the case of a specific individual there may be special reason to doubt the operator's skill and reliability. Such certificates should be ready at hand for the inspection of radio inspectors or customs officers before the steamer departs from the United States.

100. In the case of a vessel subject to the act under the flag of any nation not a party to the International Convention, the radio operator, before the departure of the vessel from the United States, must furnish to the inspector evidence that he is "skilled in the use of the apparatus." This evidence shall consist of an examination on board by the radio inspector.

Requirements for each grade.
Commercial extra.

101. *Commercial extra first grade*.--The Department of Commerce will issue a special license, to be known as commercial extra first grade, to radio operators whose trustworthiness and efficient service entitle them to confidence and recognition.

102. These licenses will be given consideration by the Civil Service Commission in examinations for positions requiring knowledge of radio telegraphy, when experience is rated as a part of such examinations.

103. Applicants for the commercial extra first-grade license must pass a special examination. To be eligible for this examination they must hold commercial first-grade licenses, and their certificates of skill in radio communication, issued under the act of June 24, 1910, or licenses under the act of August 13, 1912, must record 18 months' satisfactory commercial service at sea or at land stations, either or both, during the two years previous to the filing of the application for examination, as shown by indorsement on the license service records, or other satisfactory evidence, and provided that the applicants have not been

penalized for a violation of the radio laws and regulations.

104. A speed of at least 30 words per minute, Continental Morse, and 25 words per minute, American Morse (five letters to the word), must be attained. The technical questions and the questions on the radio laws and regulations will be considerably wider in scope than those for commercial first grade, and a higher percentage will be required.

105. All examination papers, including the code test sheets, will be marked and forwarded to the Commissioner of Navigation, with a recommendation by the radio inspector or examining officer. Examination papers will be marked upon the basis of 100, and licenses will be recommended only if 80 or better is attained.

106. Licenses of this grade will be issued by the Commissioner of Navigation, indorsed by the Secretary of Commerce, and delivered to the successful applicant through the examining officer.

Commercial first.

107. *Commercial first grade.*--The applicant must pass a satisfactory examination in--(*a*) The adjustment, operation, and care of the apparatus, including correction of faults and change from one wave length to another; (*b*) transmitting and receiving by ear at a speed of not less than 20 words a minute in Continental Morse (five letters to the word); (*c*) use and care of storage battery or other auxiliary power apparatus; (*d*) knowledge of the international regulations in force applying to radio communication; (*e*) knowledge of the requirements of the acts of Congress to regulate radio communication (secs. 3, 4, 5, 6, and 7 of the act of Aug. 13, 1912).

108. The commercial extra first grade and the commercial first grade licenses qualify holders for employment at any ship or land station of any class.

Commercial second.

109. *Commercial second grade.*--The applicant must pass a satisfactory examination in all the subjects prescribed above for the first grade, with the exception that the minimum speed in transmitting and receiving shall not be less than 12 words a minute in Continental Morse, and the examination in the subjects will not be as comprehensive as that given first-grade operators.

Cargo.

110. *Commercial cargo grade.*--Section 2 of the act of July 23, 1912, provides: "On cargo steamers, in lieu of the second operator provided for in this act, there may be substituted a member of the crew or other person who shall be duly certified and entered in the ship's log as competent to receive and understand distress calls or other usual calls indicating danger, and to aid in maintaining a constant wireless watch so far as required for the safety of life."

111. The examination will be conducted so as to determine the following facts: (*a*) That the applicant is sufficiently familiar with the Continental Morse Code to recognize the distress signal (SOS), when included in a list of other words or signals sent slowly (approximately five words a minute); (*b*) that the applicant is sufficiently familiar with the Continental Morse Code to recognize radio call letters of the vessel on which he desires to operate when sent slowly and repeated several times; (*c*) that the applicant is sufficiently familiar with the type of the receiving apparatus of the vessel on which he desires to operate to determine by a buzzer or similar test that the detector or receiving apparatus is properly adjusted to receive signals.

112. Examining officers and radio inspectors are authorized to issue a certificate, in the form of an amateur first-grade license, after examination, to indicate the facts above enumerated in the case of a member of the crew or other person, and experience under this form will be credited by examining officers if the holder later applies for examination for a commercial license. These licenses will be marked "Cargo" in the upper right-hand corner under the serial number.

Temporary permit.

113. *Commercial temporary permit.*--Section 3 of the act of August 13, 1912, provides: "In case of emergency the Secretary of Commerce may authorize a collector of customs to issue a temporary permit, in lieu of a license, to the operator on a vessel subject to the radio ship act of June 24, 1910."

114. The temporary permit, in the form of a letter to the operator, is to be issued only in cases of emergency and will be valid for one voyage from ----- to -----, beginning -----, unless the proper license or properly licensed operator can be obtained en route.

115. The permits should be issued only to persons who the collector of customs has reason to believe are skilled in the use of the apparatus, but have not had the opportunity to present themselves for examination before Government officers authorized to conduct examinations and furnish licenses.

116. The collector of customs will forward to the Department of Commerce (Bureau of

Navigation) a report covering each temporary permit issued and the reasons for its issue.

Experiment and instruction.

117. *Experiment and instruction grade.*--Experimenters and instructors of scientific attainments in the art of radio communication whose knowledge of the radio laws satisfies the radio inspector or the examining officer may obtain this grade license, provided they are able to transmit and receive in the Continental Morse Code at a speed sufficient to enable them to recognize distress calls or the "keep-out" signals.

118. The operator's license for this grade is a commercial license, indorsed by the Secretary of Commerce with a statement of the special purpose for which it is valid.

119. If the applicant qualifies, the radio inspector or examining officer will forward a blank commercial license, with the papers, to the Commissioner of Navigation, with his recommendation. If approved, the license will be properly indorsed by the Secretary of Commerce and delivered to the licensee through the recommending officer.

120. This license has no reference to the instruction of radio operators as such, but is required by those operating apparatus licensed as experimental stations but who are unable to obtain commercial grade operators' licenses.

121. Amateurs before applying for licenses should read and understand the essential parts of the International Radiotelegraphic Convention in force and sections 3, 4, 5, and 7 of the act of August 13, 1912. The Department recognizes that radio communication offers a wholesome form of instructive recreation for amateurs. At the same time its use for this purpose must observe strictly the rights of others to the uninterrupted use of apparatus for important public and commercial purposes. The Department will not knowingly issue a license to an amateur who does not recognize and will not obey this principle. To this end the intelligent reading of the International Convention and the act of Congress is prescribed as the first step to be taken by amateurs. A copy of the radio laws and regulations may be procured for this purpose from the radio inspectors or from the Commissioner of Navigation, Department of Commerce, Washington, D. C., but they are not for public distribution. Additional copies may be purchased from the Superintendent of Documents, Government Printing Office, Washington, D. C., at a nominal price.

Amateur first.

122. *Amateur first grade.*--The applicant must have a sufficient knowledge of the adjustment and operation of the apparatus which he wishes to operate and of the regulations of the International Convention and acts of Congress in so far as they relate to interference with other radio communication and impose certain duties on all grades of operators. The applicant must be able to transmit and receive in Continental Morse at a speed sufficient to enable him to recognize distress calls or the official "keep-out" signals. A speed of at least five words per minute (five letters to the word) must be attained.

Amateur second.

123. *Amateur second grade.*--The requirements for the second grade will be the same as for the first grade. The second-grade license will be issued only where an applicant can not be personally examined or until he can be examined. An examining officer or radio inspector is authorized in his discretion to waive an actual examination of an applicant for an amateur license, if the amateur for adequate reasons can not present himself for examination but in writing can satisfy the examining officer or radio inspector that he is qualified to hold a license and will conform to its obligations.

EXAMINATIONS.

Method.

124. The following requirements and method of conducting examination for radio operators' licenses will be adopted at all examining offices.

Code test (five letters to the word).

125. The test shall consist of messages with call letters and regular preambles, conventional signals and abbreviations and odd phrases, and shall in no case consist of simple, connected reading matter. The test will be conducted by means of the omnigraph or other automatic instrument wherever possible.

126. The test shall continue for five minutes at a speed of 20 words, 12 words, and 5 words per minute, respectively, for the commercial first, second, and lower grades, and to qualify the applicant must receive 20, 12, or 5 words in consecutive order.

127. The code test sheets written by the applicant will be forwarded to the Commissioner of Navigation with other papers and the speed attained noted in the lower left-hand corner of the first sheet.

128. An applicant will be given credit for the maximum speed he can attain.

Written examination.

129. The practical and theoretical examination shall consist of seven comprehensive

questions under the following headings and values:

	Points, maximum value.
(*a*) Experience	20
(*b*) Diagram of receiving and transmitting apparatus	10
(*c*) Knowledge of transmitting apparatus	20
(*d*) Knowledge of receiving apparatus	20
(*e*) Knowledge of operation and care of storage batteries	10
(*f*) Knowledge of motors and generators	10
(*g*) Knowledge of international regulations governing radio communication and the United States radio laws and regulations	10
	100

Passing mark.

130. Seventy-five constitutes a passing mark for the first grade commercial. Sixty-five constitutes a passing mark for the second grade commercial.

131. Applicants who fail to attain 20 words in the code test but who attain a mark of between 65 and 75 in the written examination may be issued second-grade licenses, if they can receive at least 12 words per minute.

Experience.

132. Question (a) shall determine the applicant's practical knowledge and experience in handling radio apparatus. An applicant's experience will be determined largely from the personal question sheet and from satisfactory letters or references submitted. Experience, operating first-class amateur apparatus, or the apparatus provided in good training schools, will be given a reasonable value, but applicants who have had experience as apprentices at commercial shore stations or on board vessels will receive higher marks.

Reexamination.

133. No applicant who fails to qualify will be reexamined at any examining office within three months from date of the previous examination. All examination papers, whether the applicant qualifies or not, will be forwarded to the Bureau of Navigation for filing as "Operator's record." When the records of the Bureau develop the fact that an applicant has failed to qualify and has applied for reexamination or been reexamined at the same or another office within three months, his existing license may be suspended or revoked by the Secretary of Commerce. Applicants to whom are issued second-grade licenses will not be examined for first grade within three months under the same rule.

PLACES WHERE EXAMINATIONS ARE HELD.

Regular examinations

134. United States navy yards: Boston, Mass.; New York; Philadelphia, Pa.; Norfolk, Va.; Charleston, S. C.; New Orleans, La.; Mare Island, Cal; Puget Sound, Wash.

135. Naval radio stations: San Juan, P. R.; Colon, R. P.; Honolulu, H. T.; Key West, Fla.

136. United States Army stations: Fort Omaha, Nebr.; Fort Wood, N. Y.; Fortress Monroe, Va.; Fort St. Michael, Alaska; Fort Valdez, Alaska.

137. Bureau of Navigation, Department of Commerce, Washington, D. C.

138. Radio inspectors, at their offices and elsewhere, by special arrangement.

139. Additional opportunities for taking the examination will be afforded as may be deemed necessary, and these special dates and places may be ascertained by communication with the Commissioner of Navigation, or nearest radio inspector.

140. All licenses, when awarded, will be delivered through the officer who conducted the examination.

Examinations for extra first-grade licenses.

141. Examinations for the commercial extra first-grade licenses will be held at the following offices only by appointment.

142. Commandants, navy yards: Boston, Mass.; Brooklyn, N. Y., Philadelphia, Pa.

143. United States radio inspectors, customhouses: New Orleans, La.; San Francisco, Calif.; Seattle, Wash.; Cleveland, Ohio; Chicago, Ill.

144. Commissioner of Navigation, Department of Commerce, Washington, D. C.

145. In special cases, upon application to the Commissioner of Navigation, arrangements may be made for examinations at other points.

APPLICATIONS FOR EXAMINATIONS FOR RADIO OPERATORS' LICENSES, RENEWALS, AND DUPLICATES.

Applications.

146. An operator's license may be granted to any person without regard to sex, nationality, or age if the applicant can fulfill the requirements for the class of license desired.

147. Applicants for licenses should communicate in writing with the commandants, commanding officers, or officers in charge, at navy yards and Army posts, with the Commissioner of Navigation, or radio inspectors, in order to fix the date when they can be examined. (See pars. 134-145.)

Special examinations.

148. Commercial licenses can only be obtained by personal examination. Where applicants are at remote points or can not proceed to examining offices, efforts will be made to examine them through radio inspectors when they are in that vicinity, but special trips can not be made for that purpose.

Amateur applications.

149. Amateurs should write to the nearest examining officer in their vicinity (see pars. 134-145) for Form 756 (application for operator's license) and to the radio inspector in their vicinity for Form 757 (application for license for land station). If the application for operator's license is also made to the radio inspector, both applications should be forwarded in the same envelope.

150. Amateur operators at points remote from examining officers and radio inspectors may be issued second-grade amateur licenses without personal examination. Examinations for first-grade licenses will be given by the radio inspector when he is in that vicinity, but special trips can not be made for this purpose. (See par. 123.)

151. Persons holding radio operators' licenses, amateur second grade, should make every effort to appear at one of the examination points to take the examination for amateur first-grade license or higher.

Renewals.

152. Persons holding radio operators' licenses of any grade should, before their licenses expire, apply to the nearest radio inspector or examining officer for renewal and submit Form 756 in duplicate.

153. Radio operators of the commercial or cargo grades whose licenses show on the service records satisfactory service for three months out of the last six months of the license term may be issued new licenses without examination. Other operators who submit satisfactory evidence to the examining officer, showing actual operations of radio apparatus for three months during the last six months of the license term, may be issued new licenses without examination. All others will be reexamined in the usual manner.

154. Whether or not a new license is issued, the radio inspector or examining officer will forward one copy of Form 756, properly completed, to the Commissioner of Navigation, Department of Commerce. If a new license is not issued, the reason therefor will be stated on the back of the form.

Duplicate licenses.

155. Any operator applying for a duplicate license to replace an original which has been lost, mutilated, or destroyed will be required to submit an affidavit to the Bureau of Navigation through the radio inspector or examining officer who issued the original, attesting the facts regarding the manner in which the original was lost. The Commissioner of Navigation will consider the facts in the case and advise the radio inspector in regard to the issue of a duplicate license. A duplicate license will be issued under the same serial number as the original and will be marked "Duplicate" in red across the face.

Oath of secrecy.

156. Operators' licenses are not valid until the oath for the preservation of the secrecy of messages is properly executed before a notary public or other officer duly authorized to administer oaths. Licenses must indicate on their faces that the oath has been taken and the officer administering the oath on the back of the license should sign also in the blank provided on the face.

Licenses will not be signed by examining officers until the oath of secrecy has been properly executed.

Posting of licenses.

157. Operators' licenses should be framed and posted in the radio room, and licenses for stations should be accessible at all times to inspectors.

Apprentices.

158. Under the supervision of a licensed operator an apprentice or unlicensed person may learn the art by the actual use of the apparatus, but the licensed operator who fails to enforce obedience to the regulations by the apprentice or unlicensed person serving under his supervision is liable to penalties as if he had himself violated the regulations.

Operators' records.

159. An individual record is kept in the Bureau of Navigation, Department of Commerce, at Washington, of each licensed operator. Each operator's examination papers and all reports in regard to interference or violations of the radio laws and regulations are filed for reference.

Surrender of licenses.

160. Radio operators holding licenses of any grade or class and applying for examination for any other grade or class must submit to the examining officer Form 756, in duplicate. If a new license is issued the license held by the applicant must be surrendered.

161. Radio operators who pass the examination for a higher grade license are required to surrender their existing licenses, which will be forwarded to the Commissioner of Navigation with the other papers.

162. Operators desiring to retain their expired or canceled licenses may make application therefor to the Commissioner of Navigation.

Part IV--GENERAL INFORMATION.

ADMINISTRATION AND ADMINISTRATIVE DISTRICTS.

Radio districts.

163. The Department has established, for the purpose of enforcing, through radio inspectors and others, the acts relating to radio communication and the International Convention, the following districts, with the principal office for each district at the customhouse of the port named.

Addresses.

164. Communications for radio inspectors should be addressed as follows, and not to individuals: Radio Inspector, Customhouse, _____(city), _____(State).

165. Communications for the Bureau of Navigation should be addressed as follows, and not to individuals: Commissioner of Navigation, Department of Commerce, Washington, D. C.

166.

1. Boston, Mass.: Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut.
2. New York, N. Y.: New York (county of New York, Staten Island, Long Island, and counties on the Hudson River to and including Schenectady, Albany, and Rensselaer) and New Jersey (counties of Bergen, Passaic, Essex, Union, Middlesex, Monmouth, Hudson, and Ocean).
3. Baltimore, Md.: New Jersey (all counties not included in second district), Pennsylvania (counties of Philadelphia, Delaware, all counties south of the Blue Mountains, and Franklin County), Delaware, Maryland, Virginia, District of Columbia.
4. Savannah, Ga.: North Carolina, South Carolina, Georgia, Florida, Porto Rico.
5. New Orleans, La.: Alabama, Mississippi, Louisiana, Texas, Tennessee, Arkansas, Oklahoma, New Mexico.
6. San Francisco, Calif.: California, Hawaii, Nevada, Utah, Arizona.
7. Seattle, Wash.: Oregon, Washington, Alaska, Idaho, Montana, Wyoming.
8. Cleveland, Ohio.: New York (all counties not included in second district), Pennsylvania (all counties not included in third district), West Virginia, Ohio, Michigan (Lower Peninsula).
9. Chicago, Ill.: Indiana, Illinois, Wisconsin, Michigan (Upper Peninsula), Minnesota, Kentucky, Missouri, Kansas, Colorado, Iowa, Nebraska, South Dakota, North Dakota.

REPORTING OF VIOLATIONS.

Inspectors' authority.

167. The regulations established by law, or by the authority of law, or of the international convention, will be enforced by the Secretary of Commerce through collectors of customs, radio inspectors, and other officers of the Government.

Foreign vessels.

168. The service regulations of the radiotelegraphic convention in force provide that "no station on shipboard shall be established or worked by private enterprise without authority from the Government to which the vessel is subject." Such authority shall be in the nature of a license issued by said Government. Stations on foreign ships will be licensed by their Governments, respectively. Inspectors will report to the Commissioner of Navigation stations on foreign ships not so licensed.

Inspectors acting outside their districts.

169. A radio inspector is authorized in exceptional cases to act outside of his district for the convenience of commerce. In such cases he will communicate before or after acting with the inspector in whose district he has acted. Radio inspectors are authorized to communicate directly with collectors of customs and to cooperate with them in the enforcement of the law.

Violations reported.

170. Violations of the laws and regulations will be reported to the chief customs officer of

the district in which the offense occurs, who will report the case to the Secretary of Commerce (Bureau of Navigation), according to the procedure followed in violations of the navigation laws. Misdemeanors will be reported to the United States district attorney in the usual manner.

171. Collectors of customs and radio inspectors are enjoined that the reports required by paragraph 170 must be precise statements of the facts as the basis for possible proceedings by the United States attorney.

172. Violations by the master of a vessel of the United States of the provisions of the second paragraph of section 1 of the ship act will be reported to the collector of customs directly, and the usual procedure in cases of fines and penalties will be followed.

INSPECTION OF SHIP STATIONS.

Inspection before clearing.

173. The radio inspectors and customs officers, as far as practicable, shall visit steamers subject to the act before they leave port and ascertain if they are equipped with the apparatus in charge of the operators prescribed by law and regulation.

Foreign vessels.

174. When the radio apparatus is certified as complying with the requirements of law by the competent authorities of a foreign Government, such certificate will be recognized by this Department, but the radio inspector or customs officer may, if he deem it necessary or desirable, satisfy himself that the apparatus is in good working order.

Inspector's certificate.

175. Whenever practicable, the radio inspector shall satisfy himself on his visit before the departure of a steamer subject to the act of July 23, 1912, that the apparatus is efficient and in good working order within the meaning of the act, and if satisfied he shall issue a certificate in the form in Appendix A (Form 752). The duplicate of these certificates will be filed with the collector of customs as a record of the radio equipment on vessels sailing from his port.

176. These certificates will be issued only if the inspection is made within two hours of sailing time.

Master's certificate.

177. For each clearance the master of a steamer coming under the act of July 23, 1912, is required to furnish to the customs officer a certificate in the form of Appendix B (Form 753). Such certificate shall be retained in the files of the collectors of customs. Whenever the radio inspector is absent from his home port he will notify the collector of customs, who will arrange for the collection of certificates and survey of equipment.

Vessels about to clear in violation.

178. Where a steamer subject to the radio law is without the apparatus and the operators prescribed, or either of them, and is about to attempt to leave port, the radio inspector or customs officer visiting the vessel shall--(*a*) Furnish the master with a memorandum (stub of Form 771) of the particulars in respect of which the law has not been complied with and the penalty; (*b*) if convenient, notify the vessel's agents or the proper person in charge of the apparatus so that the necessary corrections may be made before sailing.

Vessels clearing in violation.

179. If a steamer clears in violation of the law, the radio inspector or customs officer shall submit to the collector of customs of the port a written report, stating the exact nature of the violation, the section of the law violated, and the penalties involved and all of the circumstances in connection therewith which will be of service to the collector and to the Secretary of Commerce in determining what action shall be taken. A copy of the report will be forwarded to the Commissioner of Navigation.

180. Statements should be obtained from operators, ships officers, or other witnesses at the time the violation is discovered and should accompany the report to the collector of customs.

181. The collector of customs will report the case to the Secretary of Commerce in the usual manner as a navigation fine case.

Government vessels.

182. Merchant vessels chartered by the United States Government are subject to the act of August 13, 1912, in every case, if the radio apparatus is owned and operated by a commercial company.

183. Merchant vessels chartered by the United States Government for the transportation of persons or supplies are subject to the requirements of the ship act (act of July 23, 1912), if the vessel is controlled and operated by the owners. Vessels commanded wholly or in part by Government officers are not subject to the ship act.

184. Government vessels or vessels chartered by the Government are subject to the act of August 13, 1912, if the radio equipment is owned and operated by private interests.

Clearance.

185. The ship act does not authorize the refusal of clearance in case of violation of its provisions, but specifically provides for the imposition of a fine in a sum not more than

$5,000.

Entry.

186. The act does not apply to a vessel at the time of entering a port of the United States. Radio inspectors and customs officers may, however, accept as evidence of the efficiency of the apparatus and the skill of an operator messages shown to have been transmitted and received by him over a distance of at least 100 miles, by day, during the voyage to the United States.

OPERATORS ON FOREIGN VESSELS.

Inspection of operators.

187. In so far as licensed operators are concerned a sharp distinction should be drawn between the act of July 23, 1912, which requires apparatus and operators for radio communication on steamers, and the act of August 13, 1912, to regulate radio communication.

188. The act of July 23, 1912, amending the act of June 24, 1910, is designed to promote safety at sea through the employment of apparatus and operators to transmit and receive distress calls and other calls relating to perils and aids to navigation. It provides that in the case of American and foreign vessels subject to its provisions "the radio equipment must be in charge of two or more persons skilled in the use of such apparatus." This act does not require that the operators shall be licensed, and the penalty prescribed in section 3 of the act is not incurred by the master of a vessel whose operators are "skilled in the use of such apparatus," even though they may not be licensed.

189. The act of August 13, 1912, is designed to execute in behalf of the United States the International Radiotelegraphic Convention and thus to promote orderly exchanges by radio communication. For this purpose the International Radiotelegraphic Convention (Service Regulations) provides that the service of the station on shipboard shall be carried on by a telegraph operator holding a certificate issued by the Government to which the vessel is subject.

190. Section 3 of the act of August 13, 1912, carries out this provision of the International Convention by providing licenses for operators on American vessels. If an unlicensed person serves in charge or in supervision of the use and operation of the apparatus both he and his employer are liable to a fine of not more than $100 or imprisonment for not more than two months or both. This section and penalty do not apply to operators on foreign ships. But operators on the ships of foreign nations signatory to the International Radiotelegraphic Convention, as shown above, are required to have certificates or licenses from their own governments, and if not so certificated, the obligations of the convention have not been observed. The convention in the Service Regulations provides for this situation.

191. The act of July 23, 1912, as stated, requires that on American and foreign ships the operators must be "skilled in the use of such apparatus," but does not require that they must be licensed. To facilitate commerce and simplify administration, operators presenting American licenses or foreign certificates are accepted as "skilled in the use of such apparatus," except where there may be special reasons to doubt the operator's skill or reliability. Where operators on American or foreign ships do not have such licenses or foreign certificates, radio inspectors or customs officers under the act of July 23, 1912, may accept other competent evidence of skill or may examine such operators.

OFFICIAL INTERNATIONAL LIST OF COAST AND SHIP RADIO STATIONS OF THE WORLD AND STATION RATES.

Radio stations of the United States.

192. The list of land and ship stations of the United States, including amateurs, giving call letters, wave lengths, nature of service, etc., can be procured from the Superintendent of Documents, Government Printing Office, Washington, D. C., at a nominal price.

Supplements.

193. Supplements to this list are issued quarterly and the list is revised annually, as of July 1. Information concerning amateur stations will not be included in the supplements, but in the annual edition only.

Call letters.

194. The introduction to the list of "Radio Stations of the United States" contains information concerning the assignment of international and amateur call letters.

Official list.

195. A copy of the official Berne List, and supplements as issued, are required as a part of the equipment of every station open to general public service.

International list.

196. The International List of Radio Stations of the World (edition in English) can be procured from the International Bureau of the Telegraphic Union (Radiotelegraphic Service),

Berne, Switzerland.

197. In addition to the information contained in the pamphlet of the United States stations, published by the Bureau of Navigation, the international list shows geographical locations, normal ranges in nautical miles, radio systems, and rates.

Rates.

198. The international list includes the Government and commercial land and ship stations of the United States. The list is divided into three parts. The first part contains a list of ship stations, grouped by countries and arranged alphabetically; the second part contains a list of land stations arranged in the same manner; and the third part contains tables of land line and cable charges from coast radio stations to inland and various other points. In computing the total word rate applicable to a radiogram from a ship station to an inland point or vice versa, the three rates must be added. The rates in the international list are stated in francs. For approximate purposes 1 franc equals 20 cents and 5 centimes equals 1 cent. Supplements to the international list will be issued monthly, and will contain new stations and tables of alterations.

International call-letter list.

199. The International Alphabetical List of Call Letters (stations of the world) is also issued by the international bureau at Berne, and supplements will be issued monthly.

200. Neither the international list proper nor the supplements will contain a list of amateur stations.

Subscriptions to the international list.

201. Inquiries as to the subscription price of these lists should be made direct to the Berne bureau, at the address given above. (See par 196.) Remittances to Berne should be made by international postal money order.

MISCELLANEOUS INFORMATION.

Receiving stations.

202. Stations equipped to receive only do not require licenses.

203. Operators of receiving stations do not require licenses, but *all persons* are required to maintain secrecy in regard to messages, as provided in the act of August 13, 1912, nineteenth regulation of section 4.

Distances.

204. Distances under the radio laws are computed in nautical miles.

Fees.

205. No fees are charged for any operator or station license.

Licenses.

206. Licensed stations must be operated by or under the direct supervision of properly licensed operators.

207. Amateur stations within 5 miles of naval or military stations need not have been in actual operation on or before August 13, 1912, to obtain a license for a restricted amateur station.

Censorship of messages.

208. The master of a vessel shall have the right to censor all messages addressed to or transmitted by a radio telegraph station on board his vessel, but such master shall not divulge to any person (other than the properly authorized officials of the Government, or a competent legal tribunal) or make any use whatever of any message coming to his knowledge through the exercise of such censorship, nor shall the master or any operator divulge to any person (other than the properly authorized officials of the Government, or a competent legal tribunal) or make any use whatever of any message (other than a message of distress) coming to his knowledge and not intended for the said station.

Superfluous signals.

209. The transmission of superfluous signals by any ship or coast station is absolutely prohibited; trials and practices are forbidden except under such circumstances as to preclude the possibility of interference with other stations.

Profane language.

210. No person shall transmit or make a signal containing profane or obscene words or language.

Additions or amendments.

211. Additional or amendatory regulations will be issued from time to time as they may appear necessary.

APPENDIX.

APPENDIX A.--*Radio Service Form 752.*

CERTIFICATE OF RADIO INSPECTION.

PORT OF ______ ______,
______ ______, 191__.

This is to certify that I have to-day examined the apparatus for radio communication on the S. S. ______, of which ______ ______ is the master, about to leave this port for ______, and I have found the same efficient and in good working order, as prescribed by the act of June 24, 1910, as amended by the act of July 23, 1912.

(Signed) ______ ______,
Radio Inspector.
(Or) ______ ______,
Customs Inspector.

APPENDIX B.–*Radio Service Form 753.*

MASTER'S CERTIFICATE OF RADIO APPARATUS.

NOTICE.

The radio equipment must be in charge of two or more persons skilled in the use of such apparatus, one or the other of whom shall be on duty at all times while the vessel is being navigated. Such equipment, operators, the regulation of their watches, and the transmission and receipt of messages, except as may be required by law or international agreement, shall be under the control of the master, in the case of a vessel of the United States; and every willful failure on the part of the master to enforce at sea the provisions of this paragraph as to equipment, operators, and watches shall subject him to a penalty of one hundred dollars. (Act of July 23, 1912)

PORT OF ______ ______,
______ ______, 191__.

This is to certify that I have to-day examined the apparatus for radio communication on the S. S. ______, of which I am the master, about to leave this port for ______, and I have found the same efficient and in good working order, as prescribed by the act of June 24, 1910, as amended by the act of July 23, 1912.

(Signed) ______ ______, *Master.*

No. ______

LICENSE FOR GENERAL PUBLIC SERVICE COAST RADIO STATION.

DEPARTMENT OF COMMERCE.
BUREAU OF NAVIGATION.
RADIO SERVICE.

Pursuant to the act to regulate radio communication, approved August 13, 1912, ____________________, a citizen of the State of ____________________, ____ a company incorporated under the laws of the State of ________________, having applied therefor, is hereby granted by the Secretary of Commerce for a period of ________ on and subject to the restrictions and conditions hereinafter stated and revocable for cause by him, this License to use or operate the apparatus for radio communication (identified in the schedule hereinafter) located in the State of ____________, city or town of ___________, for the purpose of transmitting to and receiving from ship stations and other land stations general public correspondence, Government and service correspondence, and distress signals and messages, at rates of compensation not in excess of those fixed by the international agreement to which the Government of the United States has adhered, which have been submitted to and approved by the Secretary of Commerce, as included in the schedule hereinafter.

2. The use or operation of apparatus for radio communication pursuant to this License shall be subject also to the articles and regulations established by the International Radiotelegraphic Convention, ratified by the Senate of the United States and caused to be made public by the President "to the end that the same and every article and clause thereof may be observed and fulfilled with good faith by the United States and the citizens thereof," and shall be subject also to such regulations as may be established from time to time by authority of subsequent acts and treaties of the United States.

3. The authority conferred by this License is subject to the provisions of the act of February 4, 1887, entitled "An Act to regulate commerce," as amended by the act of June 18, 1910, so far as the Licensee may be within the operation of said act, and except as provided in the act of August 13, 1912, or in the International Radiotelegraphic Convention and regulations made part thereof, the station shall transmit all messages offered by those who tender lawful rates on equal terms without discrimination, whether as regards rates, order of transmission, or otherwise.

4. The licensee shall render to the Secretary of Commerce such accounts as the Secretary of Commerce shall direct in respect of all charges due or payable under the International Radiotelegraphic Convention in respect of messages exchanged between the station hereby licensed and other stations and shall pay to the Secretary of Commerce, at such times and in such manner as the

Secretary of Commerce shall direct, all sums which shall be due from the Licensee under such accounts.

5. The apparatus shall at all times while in use and operation be in charge or under the supervision of a person or persons licensed for that purpose by the Secretary of Commerce, and the operator of the apparatus shall not willfully or maliciously interfere with any other radio communication.

6. The station shall give absolute priority to signals and radiograms relating to ships in distress; shall cease all sending on hearing a distress signal; and, except when engaged in answering or aiding the ship in distress, shall refrain from sending until all signals and radiograms relating thereto are completed.

7. The station during the hours of operation shall listen in at intervals of not less than 15 minutes and for a period of not less than 2 minutes with the receiver tuned to receive messages of 300 meters wave length.

8. The station shall use the minimum amount of energy necessary to carry out any communication desired, except in case of signals or radiograms relating to vessels in distress.

9. The station shall exchange radiograms with any other commercial station and with any ship station without distinction of the radio systems adopted by such stations.

10. The station shall not use a transmitter during the first 15 minutes of each hour, local standard time, except for distress signals, whenever the Secretary of Commerce by notice in writing shall require it to observe a division of time, pursuant to the Twelfth Regulation of the act of August 13, 1912.

11. The President of the United States in time of war or public peril or disaster is authorized by law to close the station and cause the removal therefrom of all radio apparatus or may authorize the use or control of the station or apparatus by any department of the Government upon just compensation to the owners.

12. The Secretary of Commerce and Collectors of Customs or other officers of the Government authorized by him may at all reasonable times enter upon the station for the purpose of inspecting and may inspect any apparatus for radio communication of such station and the operation and operators of such apparatus.

13. The apparatus shall not be altered or modified in respect of any of the particulars mentioned in the following schedule, except with the approval of the Secretary of Commerce.

SCHEDULE OF STATION AND APPARATUS

Location: State, ____________________; County, ____________________
City or Town, ____________; Street, ______________; No. ________
____
____
Geographical location: Latitude, N. ___° ___' ___"; Longitude, W. ___° ___' ___"
Specific hours authorized during which the station must be open to service (local standard time):
____
Power: Transformer input, ______________________________ KW.
Normal day range in nautical miles with ships at sea, ______________
Time and method, if any, of sending time signals and hydrographic and meteorological radiograms:
____
____
Call letters, _____
____________; Coast charges: per word _____, minimum per radiogram _____
____________; Coast charges: per word _____, minimum per radiogram _____
____________; Coast charges: per word _____, minimum per radiogram _____

Radiotelegraphic system employed: ____________________
Characteristics of transmitting system:
Type of spark gap, ______________________________
Approximate spark frequency, ______________________________
____
Characteristics of receiving system:
Type of receiver, ______________________________
Wave length of receiving system: From __________ meters to __________ meters.
Antenna: Number of masts, ____________; Height, _____, _____, _____, _____
____
Type of aerial, ______________________________
Wires: Number, ____________; Size and kind, ______________
Wires: Essential dimensions, ______________________________
____
____

WAVE LENGTHS

The normal sending and receiving wave length shall be _____ meters, and no other wave length shall be used for general public correspondence with any foreign ship or foreign coast station, except for long-range public service or purposes other than general public correspondence.

The station shall at all times, except as provided in the seventh paragraph of this License, be ready to receive messages of such wave lengths as are required by the International Radiotelegraphic Convention; shall be prepared to use two sending wave lengths, one of 300 meters and one of 600 meters, as required by the International Radiotelegraphic Convention in force; and tuning positions on the receiver shall be plainly marked: *Provided*, That the Secretary of Commerce may, in his discretion, change the limit of wave length reservations to accord with any international agreement to which the United States is a party.

For long-range public service and for any service other than general public correspondence the station is authorized to use the following additional wave lengths under 600 or over 1,600 meters:
Meters, _______; Meters, _______; Meters, _______; Meters, _______; Meters, _______

The energy, if radiated by the transmitter in two or more wave lengths as indicated by a sensitive wave meter, shall not in any one of the lesser waves exceed 10 per cent of that in the greatest; and the logarithmic decrement per complete oscillation in the wave trains shall not exceed two-tenths, except when sending signals or messages relating to vessels in distress.

SENDING WAVE LENGTH *	ANTENNA CURRENT (AMPERES)	LOGARITHMIC DECREMENT	READING OF WAVE METER INDICATING INSTRUMENT+	
			PRINCIPAL WAVE	WAVE NEXT IN ENERGY
600 meters . . .				
300 meters . . .				
meters . . .				
meters . . .				
meters . . .				
meters . . .				

* Underscore normal

+ Type of indicating instrument, ____________________

The station insures rapid exchange with land stations of the

______________________________ ______________________________
(Company) (Location telegraph office)

______________________________ ______________________________
(Company) (Location telegraph office)

In the following manner: ____
____

Satisfactory proof has been furnished that the station was actually operating August 13, 1912.
This license will expire on the ____________ day of ______________, 191

____
Secretary of Commerce

[Seal of
Department of
Commerce]

____
Commissioner of Navigation

Washington, D. C., ____________________, 191

INSPECTIONS

DATE	INSPECTOR	REMARKS

No. ______

LICENSE FOR SHIP RADIO STATION.

DEPARTMENT OF COMMERCE.
BUREAU OF NAVIGATION.
RADIO SERVICE.

Pursuant to the act to regulate radio communication, approved August 13, 1912, ____________________, a citizen of the State of ____________________, ____ a company incorporated under the laws of the State of ________________, having applied therefor, is hereby granted by the Secretary of Commerce for a period of ___________, on and subject to the restrictions and conditions hereinafter stated and revocable for cause by him, this License to use or operate the apparatus for radio communication (identified in the schedule hereinafter) on the [Type of vessel.], called [Name of vessel.], a vessel of the United States, official number _______, for the purpose of transmitting to and receiving from ship stations and other land stations general public correspondence, Government and service correspondence, and distress signals and messages, at rates of compensation not in excess of those fixed by the international agreement to which the Government of the United States has adhered, which have been submitted to and approved by the Secretary of Commerce, as included in the schedule hereinafter.

2. The use or operation of apparatus for radio communication pursuant to this License shall be subject also to the articles and regulations established by the International Radiotelegraphic Convention, ratified by the Senate of the United States and caused to be made public by the President "to the end that the same and every article and clause thereof may be observed and fulfilled with good faith by the United States and the citizens thereof," and shall be subject also to such regulations as may be established from time to time by authority of subsequent acts and treaties of the United States.

3. The authority conferred by this License is subject to the provisions of the act of February 4, 1887, entitled "An Act to regulate commerce," as amended by the act of June 18, 1910, so far as the Licensee may be within the operation of said act, and except as provided in the act of August 13, 1912, or in the International Radiotelegraphic Convention and regulations made part thereof, the station shall transmit all messages offered by those who tender lawful rates on equal terms without discrimination, whether as regards rates, order of transmission, or otherwise.

4. The Licensee shall render to the Secretary of Commerce such accounts as the Secretary of Commerce shall direct in respect of all charges due or payable under the International Radiotelegraphic Convention in respect of messages exchanged between the station hereby licensed and other stations and shall pay to the Secretary of Commerce, at such times and in such manner as the Secretary of Commerce shall direct, all sums which shall be due from the Licensee under such accounts.

5. The apparatus shall at all times while in use and operation be in charge or under the supervision of a person or persons licensed for that purpose by the Secretary of Commerce, except when in case of emergency the Collector of Customs by authority of the Secretary of Commerce shall issue a temporary permit, in lieu of a license, to the operator. The operator of the apparatus shall not willfully or maliciously interfere with any other radio communication.

6. The station shall give absolute priority to signals and radiograms relating to ships in distress; shall cease all sending on hearing a distress signal; and, except when engaged in answering or aiding the ship in distress, shall refrain from sending until all signals and radiograms relating thereto are completed.

7. The station shall be prepared to send the international signal of distress and distress signals on the normal wave length designated by the International Radiotelegraphic Convention in force with sufficient power to enable them to be received by day over sea a distance of 100 nautical miles by a ship station equipped with apparatus for sending and receiving equal in all essential particulars to the apparatus of the station herein licensed.

8. The station shall use the minimum amount of energy necessary to carry out any communication desired, except in case of signals or radiograms relating to vessels in distress.

9. The station shall exchange radiograms with any other commercial station and with any ship station without distinction of the

radio systems adopted by such stations.

10. The station shall not use, except for sending signals of distress or signals and radiograms relating thereto, or when, owing to unusual circumstances, communication can be established only by means of an increase of power, a transformer input exceeding one kilowatt, or exceeding one-half kilowatt when within 5 nautical miles of a naval or military station.

11. The President of the United States in time of war or public peril or disaster is authorized by law to close the station and cause the removal therefrom of all radio apparatus or may authorize the use or control of the station or apparatus by any department of the Government upon just compensation to the owners.

12. The Secretary of Commerce and Collectors of Customs or other officers of the Government authorized by him may at all reasonable times enter upon the station for the purpose of inspecting and may inspect any apparatus for radio communication of such station and the operation and operators of such apparatus.

13. The apparatus shall not be altered or modified in respect of any of the particulars mentioned in the following schedule, except with the approval of the Secretary of Commerce.

SCHEDULE OF STATION AND APPARATUS

Ship: Name, ________________________; Owner, ______________________
Home port, _____________________; International code letters, _____________
Radio call letters, _____
Nature of service: ___________________________________
Hours of operation: __________________________________
Power: Transformer input, _______ K. W. Primary source of power, ___________
Normal day range in nautical miles with other ships at sea, _____________
Ship charge: Per word, ______; Minimum per radiogram, ______________
Per word, ______; Minimum per radiogram, ______________

Radiotelegraphic system employed: ____
Characteristics of transmitting system:
Type of spark gap, ____
Approximate spark frequency, _______________________________
____
Characteristics of receiving system:
Type of receiver, ____
Wave length of receiving system: From __________ meters to ________ meters.
____
Antenna: Number of masts, _______________; Height, _____, _____, _____, _____
Type of aerial, ____
Wires: Number, _____________; Size and kind, __________________
Wires: Essential dimensions, ____
____
Auxiliary apparatus: Type, ____
Power: Source, __________________; Normal day range with ships, ________________

WAVE LENGTHS

The normal sending and receiving wave length shall be 600 meters, and the station shall be prepared to use two sending wave lengths, one of 600 meters and one of 300 meters, as required by the International Radiotelegraphic Convention in force; and tuning positions shall be plainly marked: *Provided*, That the Secretary of Commerce may, in his discretion, change the limit of wave length reservations to accord with any international agreement to which the United States is a party.

A wave length of _____ meters and the following additional wave lengths not exceeding 600 meters may be employed as authorized by law and treaty:
Meters, _______; Meters, _______; Meters, _______; Meters, _______; Meters, _______

The energy, if radiated by the transmitter in two or more wave lengths as indicated by a sensitive wave meter, shall not in any one of the lesser waves exceed 10 per cent of that in the greatest; and the logarithmic decrement per complete oscillation in the wave trains shall not exceed two-tenths, except when sending signals or messages relating to vessels in distress and in sending distress signals when the transmitter may be tuned to create a maximum of interference with a maximum of radiation.

SENDING WAVE LENGTH *	ANTENNA CURRENT (AMPERES)	LOGARITHMIC DECREMENT	READING OF WAVE METER INDICATING INSTRUMENT+	
			PRINCIPAL WAVE	WAVE NEXT IN ENERGY
600 meters . . .				
300 meters . . .				
meters . . .				
meters . . .				
meters . . .				

* Underscore normal

+ Type of indicating instrument, ______________________

The station in general shall transmit its radiograms to the nearest coast station. The sender shall have the right, however, to designate the coast station through which he desires to have his radiograms transmitted, and his wishes shall be complied with only if the transmission can be effected without interfering with the service of other stations, or the shipboard station shall wait until such coast station shall be the nearest as provided by the International Convention in force.

Satisfactory proof has been furnished that the station was actually operating August 13, 1912.

This license will expire on the ____________ day of ______________, 191

____
Secretary of Commerce

[Seal of
Department of
Commerce]

____
Commissioner of Navigation

Washington, D. C., ___________________, 191

INSPECTIONS

DATE	INSPECTOR	REMARKS

No. ______

LICENSE FOR LAND RADIO STATION.

CLASS ________________________

DEPARTMENT OF COMMERCE.
BUREAU OF NAVIGATION.
RADIO SERVICE.

Pursuant to the act to regulate radio communication, approved August 13, 1912, ____________________, a citizen of the State of ____________________, ____ a company incorporated under the laws of the State of ________________, having applied therefor, is hereby granted by the Secretary of Commerce for a period of ________ on and subject to the restrictions and conditions hereinafter stated and revocable for cause by him, this License to use or operate the apparatus for radio communication (identified in the schedule hereinafter) located in the State of ____________, city or town of ___________, for the purpose of transmitting to and receiving from ship stations and other land stations general public correspondence, Government and service correspondence, and distress signals and messages, at rates of compensation not in excess of those fixed by the international agreement to which the Government of the United States has adhered, which have been submitted to and approved by the Secretary of Commerce, as included in the schedule hereinafter, or for the purpose of conducting experiments for the development of the science of radio communication or the apparatus pertaining thereto, to carry on special tests, using any amount of power or any wave lengths, at such hours and under such conditions as will insure the least interference with the sending or receipt of commercial or Government radiograms, of distress signals and radiograms, or with the work of other stations, the purpose of the station being designated by the classification at the head of this License.

2. Public correspondence or limited commercial correspondence authorized by this License shall be limited to certain stations, ships or lines of ships named hereinafter, which designation is authorized in view of the nature of the service and is independent of the radio system employed.

3. The use or operation of apparatus for radio communication pursuant to this License shall be subject also to the articles and regulations established by the International Radiotelegraphic Convention, ratified by the Senate of the United States and caused to be made public by the President, and shall be subject also to such regulations as may be established from time to time by authority of subsequent acts and treaties of the United States, in so far as they apply to the class of station indicated by this License.

4. The authority conferred by this License is subject to the provisions of the act of February 4, 1887, entitled "An Act to regulate commerce," as amended by the act of June 18, 1910, so far as the Licensee may be within the operation of said act, and except as provided in the act of August 13, 1912, or in the International Radiotelegraphic Convention and regulations made part thereof, the station shall transmit all messages offered by those who tender lawful rates on equal terms without discrimination, whether as regards rates, order of transmission, or otherwise.

5. The Licensee shall render to the Secretary of Commerce such accounts as the Secretary of Commerce shall direct in respect of all charges due or payable under the International Radiotelegraphic Convention in respect of messages exchanged between the station hereby licensed and other stations and shall pay to the Secretary of Commerce, at such times and in such manner as the Secretary of Commerce shall direct, all sums which shall be due from the Licensee under such accounts.

6. The apparatus shall at all times while in use and operation be in charge or under the supervision of a person or persons licensed for that purpose by the Secretary of Commerce, and the operator of the apparatus shall not willfully or maliciously interfere with any other radio communication.

7. The station shall give absolute priority to signals and radiograms relating to ships in distress; shall cease all sending on hearing a distress signal; and, except when engaged in answering or aiding the ship in distress, shall refrain from sending until all signals and radiograms relating thereto are completed.

8. The station shall use the minimum amount of energy necessary to carry out any communication desired, except in case of signals or radiograms relating to vessels in distress.

9. The station shall not use a transmitter during the first 15 minutes of each hour, local standard time, except for distress signals, whenever the Secretary of Commerce by notice in writing shall require it to observe a division of time, pursuant to the Twelfth Regulation of the act of August 13, 1912.

10. The President of the United States in time of war or public peril or disaster is authorized by law to close the station and cause the removal therefrom of all radio apparatus or may authorize the use or control of the station or apparatus by any department of the Government upon just compensation to the owners.

11. The Secretary of Commerce and Collectors of Customs or other officers of the Government authorized by him may at all reasonable times enter upon the station for the purpose of inspecting and may inspect any apparatus for radio communication of such station and the operation and operators of such apparatus.

12. The apparatus shall not be altered or modified in respect of any of the particulars mentioned in the following schedule, except with the approval of the Secretary of Commerce.

SCHEDULE OF STATION AND APPARATUS

Name of owner, ____
Location: State, ____________________; County, _________________________
City or Town, _______________; Street, __________________; No. __________
____
____
Geographical location: Latitude, N. ___° ___' ___"; Longitude, W. ___° ___' ___"
This station is licensed for communication only with the following land stations, ships, or lines of ships:
________________________ ________________ __________________
________________________ ________________ __________________

________________ ________________ ________________

________________ ________________ ________________

Specific hours during which the station {must/may} be open to service (local standard time): _____

____

Power: Transformer input, ________________________ KW.

Normal day range in nautical miles, ________________________

Time and method, if any, of sending time signals and hydrographic and meteorological radiograms:

____

____

Call letters, _____

______________; Coast charges: per word _____, minimum per radiogram _____

______________; Coast charges: per word _____, minimum per radiogram _____

______________; Coast charges: per word _____, minimum per radiogram _____

______________; Coast charges: per word _____, minimum per radiogram _____

Radiotelegraphic system employed: ________________________

Characteristics of transmitting system:

Type of spark gap, ________________________

Approximate spark frequency, ________________________

____

Wave length of receiving system: From __________ meters to ________ meters.

Antenna: Number of masts, ______________; Height, _____, _____, _____, _____

____

Type of aerial, ________________________

Wires: Number, ____________; Size and kind, ________________

Wires: Essential dimensions, ________________________

____

____

WAVE LENGTHS

The normal sending and receiving wave length shall be _____ meters.

If the station be classified as a coast station it shall be prepared to transmit or relay distress calls or messages using the distress wave length as provided by the International Radiotelegraphic Convention in force.

In view of special conditions the station is authorized to use for communication exclusively with station licensed by the United States the following additional wave lengths under 600 or over 1,600 meters:

Meters, _______; Meters, _______; Meters, _______; Meters, _______

The energy, if radiated by the transmitter in two or more wave lengths as indicated by a sensitive wave meter, shall not in any one of the lesser waves exceed 10 per cent of that in the greatest; and the logarithmic decrement per complete oscillation in the wave trains shall not exceed two-tenths, except when sending signals or messages relating to vessels in distress.

SENDING WAVE LENGTH	ANTENNA CURRENT (AMPERES)	LOGARITHMIC DECREMENT	READING OF WAVE METER INDICATING INSTRUMENT*	
			PRINCIPAL WAVE	WAVE NEXT IN ENERGY
600 meters . . .				
300 meters . . .				
meters . . .				
meters . . .				
meters . . .				
meters . . .				

* Type of indicating instrument, ________________

The station insures rapid exchange with land wire stations at

(Company)	**(Location telegraph office)**
(Company)	**(Location telegraph office)**

In the following manner: ____

____

Satisfactory proof has been furnished that the station was actually operating August 13, 1912.
This license will expire on the ___________ day of _____________, 191

____
Secretary of Commerce

[Seal of Department of Commerce]

____
Commissioner of Navigation

Washington, D. C., __________________, 191

INSPECTIONS

DATE	INSPECTOR	REMARKS

Number.

LICENSE FOR [General or restricted.] AMATEUR RADIO STATION.

DEPARTMENT OF COMMERCE.
BUREAU OF NAVIGATION.
RADIO SERVICE.

Pursuant to the act to regulate radio communication, approved August 13, 1912, ___________________, a citizen of the State of __________________, having applied therefor, is hereby granted by the Secretary of Commerce, for a period of _____ year __, on and subject to the restrictions and conditions hereinafter stated and revocable for cause by him, this License to use or operate the apparatus for radio communication (identified in the Schedule hereinafter) for the purpose of transmitting private radiograms or signals, notwithstanding the effect thereof extends beyond the jurisdiction of the State or Territory in which the said station is located: *Provided*, That no interference other than may result under the restrictions contained in this License shall be caused with the radio communication of stations of the Government of the United States or licensed stations.

2. The use or operation of apparatus for radio communication pursuant to this License shall be subject also to the articles and regulations established by the International Radiotelegraphic Convention, ratified by the Senate of the United States and caused to be made public by the President, and shall be subject also to such regulations as may be established from time to time by authority of subsequent acts and treaties of the United States.

3. The apparatus shall at all times while in use and operation be in charge of a person or persons licensed for that purpose by the Secretary of Commerce, and the operator of the apparatus shall not wilfully or maliciously interfere with any other radio communication.

4. The station shall give absolute priority to signals or radiograms relating to ships in distress; shall cease all sending on

hearing a distress signal; and shall refrain from sending until all the signals and radiograms relating thereto are completed.

5. The station shall use the minimum amount of energy necessary to carry out any communication desired, and the transformer input shall not exceed {one/one-half} kilowatt. [Strike out "one" if the station be within 5 nautical miles of a naval or military station; otherwise strike out "one-half."]

6. The station shall not use a transmitting wave length exceeding 200 meters.

7. The station shall not use a transmitter during the first 15 minutes of each hour, local standard time, whenever the Secretary of Commerce by notice in writing shall require it to observe a division of the time, pursuant to the Twelfth Regulation of the act of August 13, 1912.

8. The President of the United States in time of war or public peril or disaster is authorized by law to close the station and cause the removal therefrom of all radio apparatus, or may authorize the use or control of the station or apparatus by any department of the Government upon just compensation to the owners.

9. The Secretary of Commerce and Collectors of Customs or other officers of the Government authorized by him may at all reasonable times enter upon the station for the purpose of inspecting and may inspect any apparatus for radio communication of such station and the operation and operators of such apparatus.

10. The apparatus shall not be altered or modified in respect of any of the particulars mentioned in the following Schedule except with the approval of a radio inspector or other duly authorized officer of the Government.

SCHEDULE OF STATION AND APPARATUS

Name of owner, ______________________; Age, __________
Location: State, ______________; County, ____________________
City or town, __________; Street, ____________; No. ________
Official call, ____
Name of naval or military station, if within 5 nautical miles, ________
____
Power: Transformer input, ______________________ W.*
[* Not to exceed 1,000; or if the station be within 5 nautical miles of a naval or military station, not to exceed 500.]
Antenna: Type (T, ¬, fan, umbrella, etc.), ______________
Height, (Above Ground); Horizonal length, ________
Wires: Number in vertical part, __________; In horizonal part, ________

The normal sending and receiving wave length shall be (Not exceeding 200.) meters and the station is authorized to use the following additional wave lengths, not exceeding 200 meters: _____ meters, _____meters.

Satisfactory proof has been furnished that the station was actually operating August 13, 1912.

This License expires on __________, 191

EDWIN F. SWEET,
Assistant Secretary of Commerce

E. T. CHAMBERLAIN,
Commissioner of Navigation.
Delivered by (Radio inspector.)
Place, ______________, Date, ________________, 191

No. ______

THE UNITED STATES OF AMERICA.
DEPARTMENT OF COMMERCE.
BUREAU OF NAVIGATION.

LICENSE TO RADIO OPERATOR, COMMERCIAL EXTRA FIRST GRADE.

This is to certify that ____________________ has been examined and passed, pursuant to the Radiotelegraphic Convention, in

(a) adjustment, operation and care of apparatus;
(b) transmitting and sound reading at a speed of _______ words a minute, Continental Morse, and ______ words a minute, American Morse;
(c) use and care of storage battery or other auxiliary;
(d) knowledge of international regulations and Acts of Congress to regulate radio communication;
(e) knowledge of United States Naval Radio Regulations;

and is hereby licensed, as required by law, a Radio Operator, Commercial Extra First Grade, for two years.

In testimony of trustworthiness and efficient service as Radio Operator for ______ months, of which ______ months were service at sea, and of superior knowledge and skill, ascertained by special examination, this extra grade license is granted.

(Examining Officer.)	Oath of Secrecy executed.	______________
____(Title.)____	______________	*Secretary of Commerce.*
	Notary Public.	______________
Place ______________	Date ________ 191	*Commissioner of Navigation.*

No. ______

THE UNITED STATES OF AMERICA.
DEPARTMENT OF COMMERCE.
BUREAU OF NAVIGATION.

LICENSE TO RADIO OPERATOR, COMMERCIAL {First or Second.} GRADE.

This is to certify that ______________________________ has been examined and passed, pursuant to the Radiotelegraphic Convention, in

(a) adjustment, operation and care of apparatus;
(b) transmitting and sound reading at a speed of {Twenty or Twelve.} words a minute, Continental Morse;
(c) use and care of storage battery or other auxiliary;
(d) knowledge of international regulations and Acts of Congress to regulate radio communication;

and is hereby licensed, as required by law, a Radio Operator, Commercial {First or Second.} grade, for two years.

The candidate's practical knowledge of adjustment was tested on a ____________ set of apparatus. His knowledge of other systems is shown below.

____
____
____

(Examining Officer.)	Oath of Secrecy executed.	WILLIAM C. REDFIELD,
____(Title.)____	______________	*Secretary of Commerce.*
	Notary Public.	E. T. CHAMBERLAIN,
Place ______________	Date ________ 191	*Commissioner of Navigation.*

No. ______

THE UNITED STATES OF AMERICA.
DEPARTMENT OF COMMERCE.
BUREAU OF NAVIGATION.

LICENSE TO RADIO OPERATOR, AMATEUR FIRST GRADE.

This is to certify that ______________________________ has been examined and shown to have a knowledge of the adjustment and operation of apparatus and of the regulations of the Radiotelegraphic Convention and the Acts of Congress in so far as they relate to interference with radio communication and impose certain duties on all grades of operators, sufficient to entitle him to a license, and he is hereby licensed as required by law, Radio Operator, Amateur First Grade, for two years.

The candidate was examined and shown to have knowledge (excellent or good) of the following subjects:

(a) general adjustment, operation and care of apparatus {Excellent or good};
(b) transmitting and sound reading Continental Morse at a speed of {Insert speed.} words a minute;
(c) general knowledge of international regulations and Acts of Congress to regulate radio communication {Excellent or good};

(Examining Officer.)	Oath of Secrecy executed.	WILLIAM C. REDFIELD,
____(Title.)____	____________________	*Secretary of Commerce.*
	Notary Public.	E. T. CHAMBERLAIN,
Place ______________	Date ________ 191	*Commissioner of Navigation.*

No. ______

THE UNITED STATES OF AMERICA.
DEPARTMENT OF COMMERCE.
BUREAU OF NAVIGATION.
RADIO SERVICE.

LICENSE TO RADIO OPERATOR, AMATEUR SECOND GRADE.

This is to certify that ______________________________ has presented satisfactory evidence that he has a knowledge of the adjustment and operation of apparatus and of the regulations of the Radiotelegraphic Convention and the Acts of Congress, in so far as they relate to interference with radio communication and impose certain duties on all grades of operators, sufficient to entitle him to a license, and he is hereby temporarily licensed as Radio Operator, Amateur Second Grade, for the period of eight months or until he has been duly examined.

He has shown he has knowledge (excellent or good) of the following subjects:
(a) General adjustment, operation and care of apparatus {Excellent or good};
(b) Transmitting and sound reading Continental Morse at a speed of _______ words a minute;
(c) General knowledge of international regulations and Acts of Congress to regulate radio communication {Excellent or good};

(Certifying Officer.)	Oath of Secrecy executed.	WILLIAM C. REDFIELD,
____(Title.)____	____________________	*Secretary of Commerce.*
	Notary Public.	E. T. CHAMBERLAIN,
Place ______________	Date ________ 191	*Commissioner of Navigation.*

[Operators licences are not valid until the following oath has been executed on the backs of the licenses.]

I, _____________, do solemnly swear that I will faithfully preserve the secrecy of all messages coming to my knowledge through my employment under this license; that this obligation is taken freely, without mental reservation or purpose of evasion; and that I will well and faithfully discharge the duties of the office: So help me God.

(Signature of holder.)

Date of birth, ____________________ Place of birth, _______________

Sworn to and subscribed before me this ____________ day of _____________, A. D., 191

____
Notary Public.

[SEAL.]

SERVICE RECORD.

This is to certify that the holder of this license has served satisfactorily as radio operator under my orders during the period named.

Name of Ship or Land Station.	Period.	Master, Manager, or Superintendent.
______________	From ______, 19__, to ______, 19__.	______________
______________	From ______, 19__, to ______, 19__.	______________
______________	From ______, 19__, to ______, 19__.	______________
______________	From ______, 19__, to ______, 19__.	______________
______________	From ______, 19__, to ______, 19__.	______________
______________	From ______, 19__, to ______, 19__.	______________
______________	From ______, 19__, to ______, 19__.	______________
______________	From ______, 19__, to ______, 19__.	______________
______________	From ______, 19__, to ______, 19__.	______________
______________	From ______, 19__, to ______, 19__.	______________

Operators must have the service record on the backs of their licenses properly completed and signed by the master of their ship or their employer.

DEPARTMENT OF COMMERCE.
RADIO SERVICE.

INTERNATIONAL MORSE CODE AND CONVENTIONAL SIGNALS.

[To be used for all general public service radio communication. (1) A dash is equal to three dots; (2) the space between parts of the same letter is equal to one dot; (3) the space between two letters is equal to three dots; (4) the space between two words is equal to five dots.]

A .-
B -...
C -.-.
D -..
E .
F ..-.
G --.
H ....
I ..
J .---
K -.-
L .-..
M --
N -.
O ---
P .--.
Q --.-
R .-.
S ...
T -
U ..-
V ...-
W .--
X -..-
Y -.--
Z --..

Ä (German) .-.-
Á or Å (Spanish-Scandinavian) .--.-
CH (German-Spanish) ----

Period	.. .. ..
Semicolon	-.-.-.
Comma	.-.-.-
Colon	---...
Interrogation	..--..
Exclamation point	--..--
Apostrophe	.----.
Hyphen	-....-
Bar indicating fraction	-..-.
Parenthesis	-.--.-
Inverted Commas	.-..-.
Underline	..--.-
Double dash	-...-
Distress call	...---...
Attention call to precede every transmission	-.-.-
General inquiry call	-.-. --.-
From (de)	-.. .
Invitation to transmit (go ahead)	-.-
Warning--high power	--..--
Question (please repeat after ......) --interrupting long messages	..--..
Wait	.-...

CH (German-Spanish)	----		
É (French)	..--..	Break (Bk.) (double dash)	-...-
Ñ (Spanish)	--.--	Understand	...-.
Ö (German)	---.	Error	....
Ü (German)	..--	Received (O. K.)	.-.
1	.----	Position report (to precede all position messages)	- .-.
2	..---	End of each message (cross)	.-.-.
3	...--	Transmission finished (end of work) (conclusion of correspondence)	...-.-
4	....-		
5	.....		
6	-....		
7	--...		
8	---..		
9	----.		
0	-----		

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- United States Early Radio History

Amendments to the July 27, 1914 Edition of Radio Communication Laws of the United States.

Amendments to the July 27, 1914 edition of *Radio Laws and Regulations of the United States*, reported in the *Radio Service Bulletin* from issue #1 through issue #32 (January, 1915 through December 1, 1919). NOTE: Text within [brackets] are explanatory additions:

[Regulations pursuant to the act of August 13, 1912.]
[To be cut out and pasted in your copy.]

RSB Issue

January, 1915
(No. 1)

Paragraph 153, page 66, add the following sentence:

Renewals or new licenses may be issued a reasonable length of time previous to the expiration of existing licenses, but must bear the exact date of issue, which must correspond with the date on the back of Form 756 forwarded to the Commissioner of Navigation.

Paragraph 162, page 67, should read:

Operators desiring to retain their expired or canceled licenses may make application thereof or to the examining officer or to the Commissioner of Navigation. Old licenses returned to operators will be marked "Canceled" or "Expired" in red across their faces, and the service record will be transcribed on the back of Form 756 sent to the Commissioner of Navigation, in accordance with paragraph 154, above.

March, 1915
(No. 3)

Introduction, page 9, sentence commencing on the sixth line should read:

"The rates in the international list are stated in francs and centimes. For approximate purposes, 1 franc equals 20 cents and 5 ceentimes equal 1 cent."

April, 1915
(No. 4)

Paragraph 153, page 66 should read:

Renewal licenses may be issued to commercial grade operators without examination, provided the service records on the backs of licenses properly certify to three months' satisfactory commercial service during the last six months of the license term. If expired licenses have been lost or destroyed, an affidavit must be submitted attesting the facts regarding the manner in which the license was lost. In such cases evidence of the required satisfactory commercial service may be submitted in the form of letters signed by masters and employers.

Operators holding licenses of grades other than commercial, who submit satisfactory evidence to the examining officer, showing actual operation of radio apparatus for three months during the last six months of the license term, may be issued new licenses without examination. Otherwise, applicants for renewals will be examined in the usual manner.

Renewals or new licenses may be issued a reasonable length of time previous to the expiration of existing licenses, but must bear the exact date of issue, which must correspond with the date on the back of Form 756 forwarded to the Commissioner of Navigation.

Service records must be completed and signed only by masters, employers, or the duly authorized agents of either.

Any improper alteration of the service record or the forgery of masters' or employers' signatures constitutes a violation of the regulations, and the operator may suffer suspension of license for a period not exceeding one year, at the discretion of the Secretary of Commerce.

May, 1915
(No. 5)

Paragraph 153, page 66 should read:

a. Renewal licenses may be issued to commercial grade operators without examination, provided the service records on the backs of licenses properly certify to three months' satisfactory commercial service during the last six months of the license term. If expired licenses have been lost or destroyed, an affidavit must be submitted attesting the facts regarding the manner in which the license was lost. In such cases evidence of the required satisfactory commercial service may be submitted in the form of letters signed by masters and employers.

b. Operators holding licenses of grades other than commercial, who submit satisfactory evidence to the examining officer, showing actual operation of radio apparatus for three months during the last six months of the license term, may be issued new licenses without examination. Otherwise, applicants for renewals will be examined in the usual manner.

c. Renewals or new licenses may be issued a reasonable length of time previous to the expiration of existing licenses, but must bear the exact date of issue, which must correspond with the date on the back of Form 756 forwarded to the Commissioner of Navigation.

d. Operators who fail to apply for renewal of their licenses on or prior to the date of expiration must be reexamined. If, because of circumstances over which the applicant has no control, an operator is unable to apply for renewal of license on or prior to the date of expiration, an affidavit may be submitted to the Commissioner of Navigation through the radio inspector or examining officer, attesting to the facts, which will be considered by the Commissioner of Navigation, who will advise the radio inspector or examining officer in regard to the issue of a renewal of the license without reexamination.

e. Service records must be completed and signed only by masters, employers, or the duly authorized agents of

either.

f. Any improper alteration of the service record or the forgery of masters' or employers' signatures constitutes a violation of the regulations, and the operator may suffer suspension of license for a period not exceeding one year, at the discretion of the Secretary of Commerce.

June, 1915
(No. 6)

Paragraph 71, page 56, should read:

In order to comply with section 2 of the act of June 24, 1910, every land station open to general public service, and every station on board an American vessel of the first or second class engaged in the foreign trade or transoceanic service, shall have as a part of the station equipment a copy of the official Berne list and supplements thereto as issued. Information concerning the use of this list and method of procuring it is given on page 72, paragraph 196.

Paragraph 193, page 72, should read:

Supplements to this list are issued monthly under the title "Radio Service Bulletin," and the list is revised annually as of July 1. These monthly supplements contain information concerning Government, commercial, and special stations only, and information regarding amateur stations appears only in the annual edition of the list of Radio Stations of the United States. Amendments to or changes in the Radio Laws and Regulations of the United States are printed in this bulletin in such a manner that they may be clipped and pasted in their proper places in that publication. Items of general interest, concerning the enforcement of the radio laws are printed in the bulletin from time to time, as occasion warrants.

Paragraph 195, page 72, should read:

A copy of the official Berne list, and supplements as issued, are required as a part of the equipment of every land station open to general public service and every ship station of the first or second class on American vessels engaged in foreign trade or the transoceanic service.

December, 1915
(No. 12)

Paragraph 149, page 66, should read:

Amateurs should write to the nearest examining officer in their vicinity (see pars. 134-145) for Form 756 "Application for operator's license" and to the radio inspector in their vicinity for Form 762 "Amateur applicant's description of apparatus."

Foreign-born applicants for station licenses must submit satisfactory evidence of their citizenship.

Paragraph 156, page 67, add the following sentence:

Licenses will not be signed by examining officers until the oath of secrecy has been properly executed.

Paragraph 160, page 67, last sentence should read:

Licenses held by them must be submitted to the examining officer.

Paragraph 161, page 67, should read:

Radio operators who pass the examination for a higher-grade license are required to submit their existing licenses to examining officers to be marked "Canceled."

Paragraph 162, page 67, should read:

Expired or canceled licenses will be returned to the licensees, marked "Canceled" or "Expired" in red across their faces, provided the particulars on Form 756, submitted herewith, are found correct by the examining officer. The service record shown on the reverse side of the license must be transcribed on Form 756.

Paragraph 175, page 70, should read:

Whenever practicable, the radio inspector shall satisfy himself on his visit before the departure of a steamer subject to the act of June 24, 1910, as amended July 23, 1912, that the radio apparatus is efficient and in good working order within the meaning of the act. If the apparatus does not comply with the law, the radio inspector will furnish the master with the stub of Form 771 "inspection record" on which will be noted the particulars in which the apparatus does not comply with the law. Where apparatus is found to be in compliance with the law, the stub of Form 771 will not be detached.

Paragraph 176, page 70, should read:

Masters of vessels entering a port of the United States and expecting to leave under the act of June 24, 1910, as amended July 23, 1912, should file Form 753a "Radio declaration" (Appendix A) in duplicate with the customs officer at the time of entry. The customs officer will furnish one copy to the radio inspector in order that proper inspection of the radio equipment may be made before departure.

Paragraph 177, page 70, should read:

For each departure of a steamer under the act of June 24, 1910, as amended July 23, 1912, the master is required to furnish to the customs officer a certificate in the form of Appendix B (Form 753b) "Master's certificate of radio apparatus." Such certificates shall be retained in the files of the collectors of customs. The collector of customs will arrange for the collection of these certificates at all times.

Appendix A, Radio Service forms, page 75, should read:

Radio service Form 753a.

RADIO DECLARATION

(To be submitted in duplicate)

DEPARTMENT OF COMMERCE
BUREAU OF NAVIGATION
RADIO SERVICE

NOTICE.-"The radio equipment must be in charge of two or more persons skilled in the use of such apparatus, one or the other of whom shall be on duty at all times while the vessel is being navigated. Such equipment, operators, the regulation of their watches, and the transmission and receipt of messages, except as may be regulated by law or international agreement, shall be under the control of the master, in the case of a vessel of the United States; and every willful failure on the part of the master to enforce at sea the provisions of this paragraph as to equipment, operators, and watches shall subject him to a penalty of one hundred dollars."–*Act of July 23, 1912.*

PORT OF________________
DATE______________, 191

This is to certify that the (Nationality) S. S. _________________________ of the (Name of company or line), of which I am the master, entered this port on ______________________, 191 , having in crew (Number.) persons and licensed or certified to carry (Number.) passengers; that the said vessel {is/is not} equipped with radio apparatus as required by the act of June 24, 1910, as amended July 23, 1912; that the radio station is in charge of (Number.) properly licensed radio operators and the apparatus is in {efficient/inefficient} condition.

Master or Agent.

This form should be filed in duplicate with the collector of customs at time of entry, who will furnish one copy to the radio inspector of the district on the date of entry in order that proper inspection may be made of the radio apparatus prior to the clearance of the vessel.

Appendix B, Radio Service forms, page 75.
The form number of Appendix B has been changed 753 to 753b, the form remaining as heretofore.

March, 1916 (No. 15) Paragraph 63, page 56, parenthetical clause, lines two and three should read:
SEC. 4, fifteenth regulation, act of August 13, 1912.

June, 1916 (No. 18) Paragraph 152-a, page 66, insert the following:

Holders of commercial extra first-grade radio operators' licenses may be issued renewal of such licenses without examination, provided the service records on the backs of the licenses properly certify to 12 months' satisfactory service in a land or ship station open to general public service, at least 6 months of which must have been served during the last 12 months of the license period.

However, holders of commercial extra first-grade licenses now employed as radio inspectors, radio instructors, or similar occupations requiring exceptional qualifications where the duties require the testing, or demonstrating, or otherwise using commercial radio apparatus and the telegraph codes, may be issued renewals of their licenses without reexamination, provided, in addition to the above, they can show satisfactory evidence of such service covering a period of 18 months out of the two-year license period. Where the applicant has not used regularly the telegraph codes, he will be given the code examination required in the original examination or, if he has used only one code, he will be examined in the code not used.

The service record shown on the licenses must be transcribed on Form 756.

July, 1916 (No. 19) Paragraph 126, page 64, amended July 1, 1916 to read:

The code test shall continue for 5 minutes at a speed of 20 words, 12 words, and 5 words a minute, respectively, for the commercial first, second, and lower grades, 5 letters, numerals, or other characters to the word, and to qualify the applicant must receive 20, 12, or 5 words in consecutive order accurately and legibly written. Operators will not be permitted to break or interrupt while receiving or to correct or alter the transcription after it has been submitted to the examining officer.

September 1, 1916 (No. 21) Paragraph 73, page 57, amended September 1, 1916 to read:

Persons or corporations holding licenses for radio stations, either land or ship, should notify the radio inspector for the district whenever the station or vessel goes out of commission for a period exceeding three months. The Commissioner of Navigation should be notified promptly of any intention to suspend or discontinue the service of any commercial station.

Paragraph 74, page 57, amended September 1, 1916 to read:

If there is no intention to resume the same service, or if the station or vessel will enter a different service from that indicated by the license, the radio inspector will submit the license to the bureau, together with a statement of the facts, so that the license may be amended.

Paragraph 75, page 57, amended September 1, 1916 to read:

When the station goes into commission, the radio inspector will satisfy himself that the station corresponds to the schedule of the station as shown in the license.

Paragraph 93, page 59, amended September 1, 1916 to read:

Hereafter expired station licenses of all classes, commercial and amateur, need not be returned to the radio inspectors with applications for renewals. Owners desiring a renewal license must complete new forms, as prescribed for original applications. New licenses will be issued in every case of renewal.

NOTE: Publication of the *Radio Service Bulletin* was suspended during World War I. (During the war, every radio station in the United States was either closed down or taken over by the U.S. Government.) Issue #27, dated March 1, 1917, was the last issue produced before the suspension. The publication started up again after the war with issue #28, dated August 1, 1919.

August 1, 1919
(No. 28)

Paragraph 122, page 63, amended December 20, 1918, to read:

Amateur, first grade.--The applicant must have a sufficient knowledge of the adjustment and operation of the apparatus which he wishes to operate and of the regulations of the international convention and acts of Congress in so far as they relate to the interference with other radio communication and impose certain duties on all grades of operators. The applicant must be able to transmit and receive Continental Morse code at a speed sufficient to enable him to recognize distress calls or the official "keep out" signals. A speed of at least 10 words per minute (5 letters to the word) must be obtained.

Paragraph 126, page 64, amended December 20, 1918, to read:

The code test shall continue for five minutes at a speed of 20 words, 12 words, and 10 words per minute, respectively, for the commercial first, second, and amateur first-grade license, 5 letters, numerals, or other characters to the word, and to qualify the applicant must receive 20, 12, and 10 words in consecutive order accurately and legibly written. Operators will not be permitted to break or interrupt while receiving or to correct or alter the transcription after it has been submitted to the examining officer.

Radio operators' examinations are held by the radio inspectors at the following ports: At the customhouse in Boston, New York, Baltimore, New Orleans, and San Francisco; Federal Building in Chicago and Detroit; 205 Citizens Bank Building, Norfolk; and 2301 L. C. Smith Building, Seattle.

November 1, 1919
(No. 31)

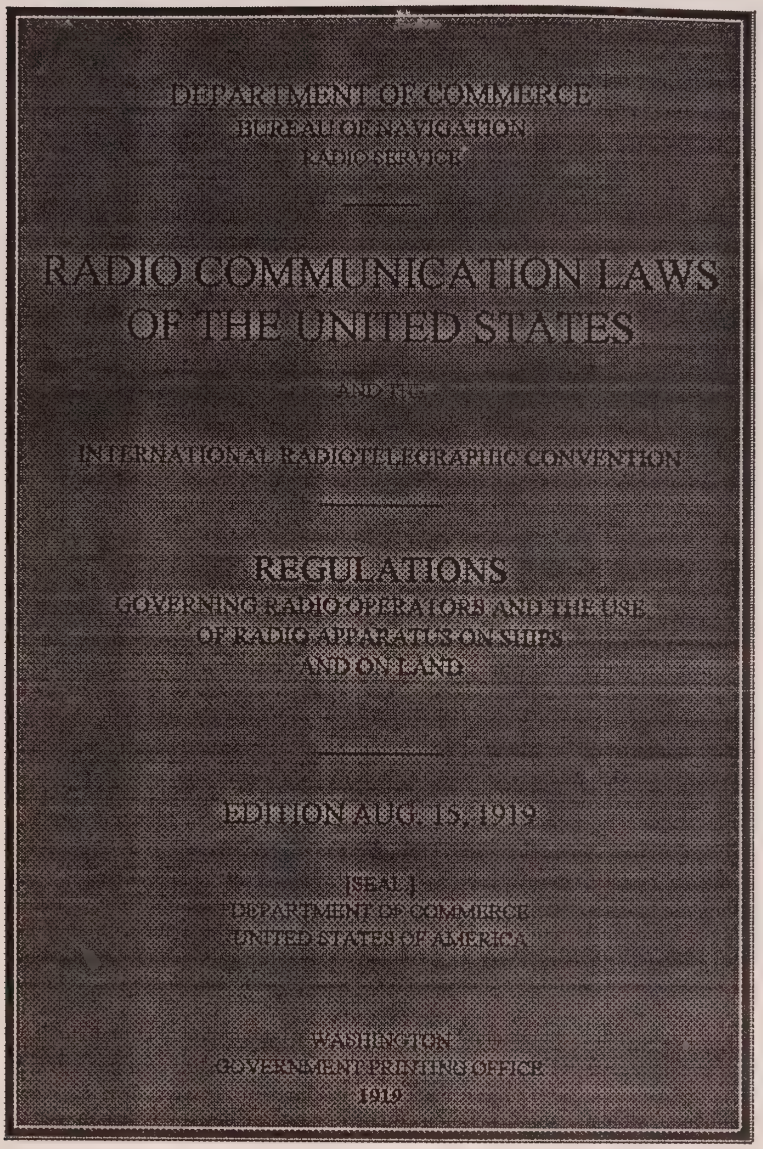
Paragraph 166:

Amended so as to eliminate Cleveland, Ohio, and substitute Detroit, Mich., in lieu thereof.

NOTE: Beginning with the January 2, 1920 issue (No. 33) of the *Radio Service Bulletin*, regulation changes applied to the revised, August 15, 1919 edition, of *Radio Laws and Regulations of the United States*.

- United States Early Radio History

Radio Communication Laws of the United States, Aug. 15, 1919.



DEPARTMENT OF COMMERCE
BUREAU OF NAVIGATION
RADIO SERVICE

RADIO COMMUNICATION LAWS
OF THE UNITED STATES

AND THE

INTERNATIONAL RADIOTELEGRAPHIC CONVENTION

REGULATIONS
GOVERNING RADIO OPERATORS AND THE USE
OF RADIO APPARATUS ON SHIPS
AND ON LAND

EDITION AUG. 15, 1919

[SEAL]
DEPARTMENT OF COMMERCE
UNITED STATES OF AMERICA

WASHINGTON
GOVERNMENT PRINTING OFFICE
1919

This is an HTML version of the original government document, *Radio Laws and Regulations of the United States* [C11.7^5:1919], which contained the major International agreements, plus United States radio laws and regulations, current at the time of publication. (Subsequent changes to these regulations were reported in the *Radio Service Bulletin*.)

This version is based on a photocopy of the original 102-page publication. It incorporates all of the original contents (except for some minor elements, such as page numbers), keeping as much as possible the layout of the original document.

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DEPARTMENT OF COMMERCE,
BUREAU OF NAVIGATION,
Washington, D. C., July 27, 1914.

To collectors of customs, radio inspectors, and others concerned:

This publication is issued for the guidance and instruction of United States officers engaged in and concerned with the enforcement of radio laws and for the information of all owners and operators of apparatus for radio communication.

In this issue are printed the act of June 24, 1910, as amended July 23, 1912, "An act to require apparatus and operators for radio communication on certain steamers"; the act of August 13, 1912, "An act to regulate radio communication"; the International Radiotelegraphic Convention; regulations made pursuant to the above mentioned acts, and general information. This edition supersedes Department Circular No. 241, "Regulations for radio apparatus and operators on steamers"; "Regulations governing radio communication," and all general letters concerning the wireless communication laws.

The act of August 13, 1912 (Public 264), the London Radiotelegraphic Convention and the Regulations hereafter will not be printed as separate pamphlets.

The subject matter is divided into parts and each part is divided under subheadings, as shown by the table of contents. The index is at the end.

Owners and operators of radio stations and others concerned may obtain copies of this publication from the radio inspectors given in the list of districts or from the Commissioner of Navigation, Department of Commerce, Washington, D. C. Additional copies may be purchased from the Superintendent of Documents, Government Printing Office, Washington, D. C., at a nominal price.

E. T. CHAMBERLAIN,
Commissioner of Navigation.

Approved:
WILLIAM C. REDFIELD,
Secretary.

RADIO LAWS AND REGULATIONS OF THE UNITED STATES.

Part I.--RADIO COMMUNICATION LAWS AND INTERNATIONAL TREATIES.

An act approved July 23, 1912, amending section 1 of an act entitled "An Act to require apparatus and operators for radio communication on certain ocean steamers," approved June 24, 1910. [The amended act applies to vessels licensed to carry as well as those actually carrying 50 or more persons, etc.]

Ship acts.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, * * *

Auxiliary.
Operators.
Penalty.

"SECTION 1. That from and after October first, nineteen hundred and twelve, it shall be unlawful for any steamer of the United States or of any foreign country navigating the ocean or the Great Lakes and licensed to carry, or carrying, fifty or more persons, including passengers or crew or both, to leave or attempt to leave any port of the United States unless such steamer shall be equipped with an efficient apparatus for radio communication, in good working order, capable of transmitting and receiving messages over a distance of at least one hundred miles, day or night. An auxiliary power supply, independent of the vessel's main electric power plant, must be provided which will enable the sending set for at least four hours to send messages over a distance of at least one hundred miles, day or night, and efficient communication between the operator in the radio room and the bridge shall be maintained at all times.

"The radio equipment must be in charge of two or more persons skilled in the use of such apparatus, one or the other of whom shall be on duty at all times while the vessel is being navigated. Such equipment, operators, the regulation of their watches, and the transmission and receipt of messages, except as may be regulated by law or international agreement, shall be under the control of the master, in the case of a vessel of the United States; and every willful failure on the part of the master to enforce at sea the provisions of this paragraph as to equipment, operators, and watches shall subject him to a penalty of one hundred dollars.

"That the provisions of this section shall not apply to steamers plying between ports, or places, less than two hundred miles apart."

Cargo Operators.

SEC. 2. That this Act, so far as it relates to the Great Lakes, shall take effect on and after April first, nineteen hundred and thirteen, and so far as it relates to ocean cargo steamers shall take effect on and after July first, nineteen hundred and thirteen: *Provided*, That on cargo steamers, in lieu of the second operator provided for in this Act, there may be substituted a member of the crew or other person who shall be duly certified and entered in the ship's log as competent to receive and understand distress calls or other usual calls indicating danger, and to aid in maintaining a constant wireless watch so far as required for the safety of life.

The remaining sections of the act of June 24, 1910, which are unchanged, read as follows:

Intercommunication.

SEC. 2. That for the purpose of this Act apparatus for radio communication shall not be deemed to be efficient unless the company installing it shall contract in writing to exchange, and shall, in fact, exchange, as far as may be physically practicable, to be determined by the master of the vessel, messages with shore or ship stations using other systems of radio communication.

Penalty.

SEC. 3. That the master or other person being in charge of any such vessel which leaves or attempts to leave any port of the United States in violation of any of the provisions of this Act shall, upon conviction, be fined in a sum not more than five thousand dollars, and any such fine shall be a lien upon such vessel, and such vessel may be libeled therefor in any district court of the United States within the jurisdiction of which such vessel shall arrive or depart, and the leaving or attempting to leave each and every port of the United States shall constitute a separate offense.

SEC. 4. That the Secretary of Commerce shall make such regulations as may be necessary to secure the proper execution of this Act by collectors of customs and other officers of the Government.

[PUBLIC--NO. 264.]
[S. 6412.]

An Act To regulate radio communication, approved August 13, 1912.

Radio act.
License.
Penalty.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That a person, company, or corporation within the jurisdiction of the United States shall not use or operate any apparatus for radio communication as a means of commercial intercourse among the several States, or with foreign nations, or upon any vessel of the United States engaged in interstate or foreign commerce, or for the transmission of radiograms or signals the effect of which extends beyond the jurisdiction of the State or Territory in which the same are made, or where interference would be caused thereby with the receipt of messages or signals from beyond the jurisdiction of the said State or Territory, except under and in accordance with a license, revocable for cause, in that behalf granted by the Secretary of Commerce upon application therefor; but nothing in this Act shall be construed to apply to the transmission and exchange of radiograms or signals between points situated in the same State: *Provided,* That the effect thereof shall not

extend beyond the jurisdiction of the said State or interfere with the reception of radiograms or signals from beyond said jurisdiction; and a license shall not be required for the transmission or exchange of radiograms or signals by or on behalf of the Government of the United States, but every Government station on land or sea shall have special call letters designated and published in the list of radio stations of the United States by the Department of Commerce. Any person, company, or corporation that shall use or operate any apparatus for radio communication in violation of this section, or knowingly aid or abet another person, company, or corporation in so doing, shall be deemed guilty of a misdemeanor, and on conviction thereof shall be punished by a fine not exceeding five hundred dollars, and the apparatus or device so unlawfully used and operated may be adjudged forfeited to the United States.

License form.

SEC. 2. That every such license shall be in such form as the Secretary of Commerce shall determine and shall contain the restrictions, pursuant to this Act, on and subject to which the license is granted; that every such license shall be issued only to citizens of the United States or Porto Rico or to a company incorporated under the laws of some State or Territory or of the United States or Porto Rico, and shall specify the ownership and location of the station in which said apparatus shall be used and other particulars for its identification and to enable its range to be estimated; shall state the purpose of the station, and in case of a station in actual operation at the date of passage of this Act, shall contain the statement that satisfactory proof has been furnished that it was actually operating on the above-mentioned date; shall state the wave length or the wave lengths authorized for use by the station for the prevention of interference and the hours for which the station is licensed for work; and shall not be construed to authorize the use of any apparatus for radio communication in any other station than that specified. Every such license shall be subject to the regulations contained herein, and such regulations as may be established from time to time by authority of this Act or subsequent Acts and treaties of the United States. Every such license shall provide that the President of the United States in time of war or public peril or disaster may cause the closing of any station for radio communication and the removal therefrom of all radio apparatus, or may authorize the use or control of any such station or apparatus by any department of the Government, upon just compensation to the owners.

Operators.

Suspension of license.

Penalty.

Temporary permit.

SEC. 3. That every such apparatus shall at all times while in use and operation as aforesaid be in charge or under the supervision of a person or persons licensed for that purpose by the Secretary of Commerce. Every person so licensed who in the operation of any radio apparatus shall fail to observe and obey regulations contained in or made pursuant to this Act or subsequent Acts or treaties of the United States, or any one of them, or who shall fail to enforce obedience thereto by an unlicensed person while serving under his supervision, in addition to the punishments and penalties herein prescribed, may suffer the suspension of the said license for a period to be fixed by the Secretary of Commerce not exceeding one year. It shall be unlawful to employ any unlicensed person or for any unlicensed person to serve in charge or in supervision of the use and operation of such apparatus, and any person violating this provision shall be guilty of a misdemeanor, and on conviction thereof shall be punished by a fine of not more than one hundred dollars or imprisonment for not more than two months; or both, in the discretion of the court, for each and every such offense: *Provided,* That in case of emergency the Secretary of Commerce may authorize a collector of customs to issue a temporary permit, in lieu of a license, to the operator on a vessel subject to the radio ship act of June twenty-fourth, nineteen hundred and ten.

Regulations.

SEC. 4. That for the purpose of preventing or minimizing interference with communication between stations in which such apparatus is operated, to facilitate radio communication, and to further the prompt receipt of distress signals, said private and commercial stations shall be subject to the regulations of this section. These regulations shall be enforced by the Secretary of Commerce through the collectors of customs and other officers of the Government as other regulations herein provided for.

The Secretary of Commerce may, in his discretion, waive the provisions of any or all of these regulations when no interference of the character above mentioned can ensue.

Experimental stations.

The Secretary of Commerce may grant special temporary licenses to stations actually engaged in conducting experiments for the development of the science of radio communication, or the apparatus pertaining thereto, to carry on special tests, using any amount of power or any wave lengths, at such hours and under such conditions as will insure the least interference with the sending or receipt of commercial or Government radiograms, of distress signals and radiograms, or with the work of other stations.

In these regulations the naval and military stations shall be understood to be stations on land.

REGULATIONS.

NORMAL WAVE LENGTH.

First. Every station shall be required to designate a certain definite wave length as the normal sending and receiving wave length of the station. This wave length shall not exceed six hundred meters or it shall exceed one thousand six hundred meters. Every coastal station open to general public service shall at all times be ready to receive messages of such wave lengths as are required by the Berlin convention. Every ship station,

except as hereinafter provided, and every coast station open to general public service shall be prepared to use two sending wave lengths, one of three hundred meters and one of six hundred meters, as required by the international convention in force: *Provided,* That the Secretary of Commerce may, in his discretion, change the limit of wave length reservation made by regulations first and second to accord with any international agreement to which the United States is a party.

OTHER WAVE LENGTHS.

Second. In addition to the normal sending wave length all stations, except as provided hereinafter in these regulations, may use other sending wave lengths: *Provided,* That they do not exceed six hundred meters or that they do exceed one thousand six hundred meters: *Provided further,* That the character of the waves emitted conforms to the requirements of regulations third and fourth following.

USE OF A "PURE WAVE."

Third. At all stations if the sending apparatus, to be referred to hereinafter as the "transmitter," is of such a character that the energy is radiated in two or more wave lengths, more or less sharply defined, as indicated by a sensitive wave meter, the energy in no one of the lesser waves shall exceed ten per centum of that in the greatest.

USE OF A "SHARP WAVE."

Fourth. At all stations the logarithmic decrement per complete oscillation in the wave trains emitted by the transmitter shall not exceed two-tenths, except when sending distress signals or signals and messages relating thereto.

USE OF "STANDARD DISTRESS WAVE."

Fifth. Every station on shipboard shall be prepared to send distress calls on the normal wave length designated by the international convention in force, except on vessels of small tonnage unable to have plants insuring that wave length.

SIGNAL OF DISTRESS.

Sixth. The distress call used shall be the international signal of distress • • • — — — • • •

USE OF "BROAD INTERFERING WAVE" FOR DISTRESS SIGNALS.

Seventh. When sending distress signals, the transmitter of a station on shipboard may be tuned in such a manner as to create a maximum of interference with a maximum of radiation.

DISTANCE REQUIREMENT FOR DISTRESS SIGNALS.

Eighth. Every station on shipboard, wherever practicable, shall be prepared to send distress signals of the character specified in regulations fifth and sixth with sufficient power to enable them to be received by day over sea a distance of one hundred nautical miles by a shipboard station equipped with apparatus for both sending and receiving equal in all essential particulars to that of the station first mentioned.

"RIGHT OF WAY" FOR DISTRESS SIGNALS.

Ninth. All stations are required to give absolute priority to signals and radiograms relating to ships in distress; to cease all sending on hearing a distress signal; and, except when engaged in answering or aiding the ship in distress, to refrain from sending until all signals and radiograms relating thereto are completed.

REDUCED POWER FOR SHIPS NEAR A GOVERNMENT STATION.

Tenth. No station on shipboard, when within fifteen nautical miles of a naval or military station, shall use a transformer input exceeding one kilowatt, nor, when within five nautical miles of such a station, a transformer input exceeding one-half kilowatt, except for sending signals of distress, or signals or radiograms relating thereto.

INTERCOMMUNICATION.

Eleventh. Each shore station open to general public service between the coast and vessels at sea shall be bound to exchange radiograms with any similar shore station and with any ship station without distinction of the radio system adopted by such stations, respectively, and each station on shipboard shall be bound to exchange radiograms with any other station on shipboard without distinction of the radio systems adopted by each station, respectively.

It shall be the duty of each such shore station, during the hours it is in operation, to listen in at intervals of not less than fifteen minutes and for a period not less than two minutes, with the receiver tuned to receive messages of three hundred meter wave lengths.

DIVISION OF TIME.

Twelfth. At important seaports and at all other places where naval or military and private or commercial shore stations operate in such close proximity that interference with the work of naval and military stations can not be avoided by the enforcement of the regulations contained in the foregoing regulations concerning wave lengths and character of signals emitted, such private or commercial shore stations as do interfere with the reception of signals by the naval and military stations concerned shall not use their transmitters during the first fifteen minutes of each hour, local standard time. The Secretary of Commerce may, on the recommendation of the department concerned, designate the station or stations which may be required to observe this division of time.

GOVERNMENT STATIONS TO OBSERVE DIVISION OF TIME.

Thirteenth. The naval or military stations for which the above-mentioned division of time may be established shall transmit signals or radiograms only during the first fifteen minutes of each hour, local standard time, except in case of signals or radiograms relating to vessels in distress, as hereinbefore provided.

USE OF UNNECESSARY POWER.

Fourteenth. In all circumstances, except in case of signals or radiograms relating to vessels in distress, all stations shall use the minimum amount of energy necessary to carry out any communication desired.

GENERAL RESTRICTIONS ON PRIVATE STATIONS.

Fifteenth. No private or commercial station not engaged in the transaction of bona fide commercial business by radio communication or in experimentation in connection with the development and manufacture of radio apparatus for commercial purposes shall use a transmitting wave length exceeding two hundred meters, or a transformer input exceeding one kilowatt, except by special authority of the Secretary of Commerce contained in the license of that station: *Provided*, That the owner or operator of a station of the character mentioned in this regulation shall not be liable for a violation of the requirements of the third or fourth regulations to the penalties of one hundred dollars or twenty-five dollars, respectively, provided in this section unless the person maintaining or operating such station shall have been notified in writing that the said transmitter has been found, upon tests conducted by the Government, to be so adjusted as to violate the said third and fourth regulations, and opportunity has been given to said owner or operator to adjust said transmitter in conformity with said regulations.

SPECIAL RESTRICTIONS IN THE VICINITIES OF GOVERNMENT STATIONS.

Sixteenth. No station of the character mentioned in regulation fifteenth situated within five nautical miles of a naval or military station shall use a transmitting wave length exceeding two hundred meters or a transformer input exceeding one-half kilowatt.

SHIP STATIONS TO COMMUNICATE WITH NEAREST SHORE STATIONS.

Seventeenth. In general, the shipboard stations shall transmit their radiograms to the nearest shore station. A sender on board a vessel shall, however, have the right to designate the shore station through which he desires to have his radiograms transmitted. If this can not be done, the wishes of the sender are to be complied with only if the transmission can be effected without interfering with the service of other stations.

LIMITATIONS FOR FUTURE INSTALLATIONS IN VICINITIES OF GOVERNMENT STATIONS.

Eighteenth. No station on shore not in actual operation at the date of the passage of this Act shall be licensed for the transaction of commercial business by radio communication within fifteen nautical miles of the following naval or military stations, to wit: Arlington, Virginia; Key West, Florida; San Juan, Porto Rico; North Head and Tatoosh Island, Washington; San Diego, California; and those established or which may be

established in Alaska and in the Canal Zone; and the head of the department having control of such Government stations shall, so far as is consistent with the transaction of governmental business, arrange for the transmission and receipt of commercial radiograms under the provisions of the Berlin convention of nineteen hundred and six and future international conventions or treaties to which the United States may be a party, at each of the stations above referred to, and shall fix the rates therefor, subject to control of such rates by Congress. At such stations and wherever and whenever shore stations open for general public business between the coast and vessels at sea under the provisions of the Berlin convention of nineteen hundred and six and future international conventions and treaties to which the United States may be a party shall not be so established as to insure a constant service day and night without interruption, and in all localities wherever or whenever such service shall not be maintained by a commercial shore station within one hundred nautical miles of a naval radio station, the Secretary of the Navy shall, so far as is consistent with the transaction of Government business, open naval radio stations to the general public business described above, and shall fix rates for such service, subject to control of such rates by Congress. The receipts from such radiograms shall be covered into the Treasury as miscellaneous receipts.

SECRECY OF MESSAGES.

Nineteenth. No person or persons engaged in or having knowledge of the operation of any station or stations, shall divulge or publish the contents of any messages transmitted or received by such station, except to the person or persons to whom the same may be directed, or their authorized agent, or to another station employed to forward such message to its destination, unless legally required so to do by the court of competent jurisdiction or other competent authority. Any person guilty of divulging or publishing any message, except as herein provided, shall, on conviction thereof, be punishable by a fine of not more than two hundred and fifty dollars or imprisonment for a period of not exceeding three months, or both fine and imprisonment, in the discretion of the court.

PENALTIES.

For violation of any of these regulations, subject to which a license under sections one and two of this Act may be issued, the owner of the apparatus shall be liable to a penalty of one hundred dollars, which may be reduced or remitted by the Secretary of Commerce, and for repeated violations of any of such regulations, the license may be revoked.

For violation of any of these regulations, except as provided in regulation nineteenth, subject to which a license under section three of this Act may be issued, the operator shall be subject to a penalty of twenty-five dollars, which may be reduced or remitted by the Secretary of Commerce, and for repeated violations of any such regulations, the license shall be suspended or revoked.

Interference.

SEC. 5. That every license granted under the provisions of this Act for the operation or use or apparatus for radio communication shall prescribe that the operator thereof shall not willfully or maliciously interfere with any other radio communication. Such interference shall be deemed a misdemeanor, and upon conviction thereof the owner or operator, or both, shall be punishable by a fine of not to exceed five hundred dollars or imprisonment for not to exceed one year, or both.

SEC. 6. That the expression "radio communication" as used in this Act means any system of electrical communication by telegraphy or telephony without the aid of any wire connecting the points from and at which the radiograms, signals, or other communications are sent or received.

False signals.

SEC. 7. That a person, company, or corporation within the jurisdiction of the United States shall not knowingly utter or transmit, or cause to be uttered or transmitted, any false or fraudulent distress signal or call or false or fraudulent signal, call, or other radiogram of any kind. The penalty for so uttering or transmitting a false or fraudulent distress signal or call shall be a fine of not more than two thousand five hundred dollars or imprisonment for not more than five years, or both, in the discretion of the court, for each and every such offense, and the penalty for so uttering or transmitting, or causing to be uttered or transmitted, any other false or fraudulent signal, call, or other radiogram shall be a fine of not more than one thousand dollars or imprisonment for not more than two years, or both, in the discretion of the court, for each and every such offense.

Foreign vessels.

SEC. 8. That a person, company, or corporation shall not use or operate any apparatus for radio communication on a foreign ship in territorial waters of the United States otherwise than in accordance with the provisions of sections four and seven of this Act and so much of section five as imposes a penalty for interference. Save as aforesaid, nothing in this Act shall apply to apparatus for radio communication on any foreign ship.

SEC. 9. That the trial of any offense under this Act shall be in the district in which it is committed, or if the offense is committed upon the high seas or out of the jurisdiction of any particular State or district the trial shall be in the district where the offender may be found or into which he shall be first brought.

SEC. 10. That this Act shall not apply to the Philippine Islands.

SEC. 11. That this Act shall take effect and be in force on and after four months from its passage.

Approved, August 13, 1912.

LONDON INTERNATIONAL RADIOTELEGRAPHIC CONVENTION, PROCLAIMED BY THE PRESIDENT JULY 8, 1913.

London convention.

The International Radiotelegraphic Convention was signed at London July 5, 1912. The convention was ratified by the Senate of the United States on January 22, 1913, with the proviso set forth in the following resolution of concurrence:

> *Resolved (two-thirds of the Senators present concurring therein)*, That the Senate advise and consent to the ratification of the radiotelegraphic convention signed at London on July 5, 1912, with the final protocol and service regulations connected therewith: *Provided*, That the Senate advise and consent to the ratification of said convention with the understanding to be expressed as a part of the instrument of ratification that nothing in the Ninth Article of the Regulations affixed to the convention shall be deemed to exclude the United States from the execution of her inspection laws upon vessels entering in or clearing from her ports.

The London Convention was proclaimed by the President, and took effect July 8, 1913, "to the end that the same and every article and clause thereof may be observed and fulfilled with good faith by the United States and the citizens thereof," and supersedes the Berlin Radiotelegraphic Convention.

The London Convention and Regulations do not modify or repeal the act of August 13, 1912 to regulate radio communication or the acts of June 24, 1910, and July 23, 1912, to require apparatus and operators for radio communication on certain ocean steamers.

INTERNATIONAL RADIOTELEGRAPHIC CONVENTION, LONDON, 1912.

[Translation.]

International Radiotelegraph Convention concluded between Germany and the German Protectorates, the United States of America and the Possessions of the United States of America, the Argentine Republic, Austria, Hungary, Bosnia-Herzegovina, Belgium, the Belgian Congo, Brazil, Bulgaria, Chile, Denmark, Egypt, Spain and the Spanish Colonies, France and Algeria, French West Africa, French Equatorial Africa, Indo-China, Madagascar, Tunis, Great Britain and the various British Colonies and Protectorates, the Union of South Africa, the Australian Federation, Canada, British India, New Zealand, Greece, Italy and the Italian Colonies, Japan and Chosen, Formosa, Japanese Sakhalin and the leased territory of Kwantung, Morocco, Monaco, Norway, the Netherlands, the Dutch Indies and the Colony of Curacao, Persia, Portugal and the Portuguese Colonies, Roumania, Russia and the Russian Possessions and Protectorates, The Republic of San Marino, Siam, Sweden, Turkey, and Uruguay.

The undersigned, plenipotentiaries of the Governments of the countries enumerated above, having met in conference at London, have agreed on the following Convention, subject to ratification:

ARTICLE 1.

Scope.

The High Contracting Parties bind themselves to apply the provisions of the present Convention to all radio stations (both coastal stations and stations on shipboard) which are established or worked by the Contracting Parties and open to public service between the coast and vessels at sea.

They further bind themselves to make the observance of these provisions obligatory upon private enterprises authorized either to establish or work coastal stations for radiotelegraphy open to public service between the coast and vessels at sea, or to establish or work radio stations, whether open to general public service or not, on board of vessels flying their flag.

ARTICLE 2.

Coast stations.

By "coastal stations" is to be understood every radio station established on shore or on board a permanently moored vessel used for the exchange of correspondence with ships at sea.

Every radio station established on board any vessel not permanently moored is called a "station on shipboard."

ARTICLE 3.

Intercommunication.

The coastal stations and the stations on shipboard shall be bound to exchange radiograms without distinction of the radio system adopted by such stations.

Every station on shipboard shall be bound to exchange radiograms with every other station on shipboard without distinction of the radio system adopted by such stations.

However, in order not to impede scientific progress, the provisions of the present Article shall not prevent the eventual employment of a radio system incapable of communicating with other systems, provided that such incapacity shall be due to the specific nature of such system and that it shall not be the result of devices adopted for the sole purpose of preventing intercommunication.

ARTICLE 4.

Limited service.

Notwithstanding the provisions of Article 3, a station may be reserved for a limited public service determined by the object of the correspondence or by other circumstances independent of the system employed.

ARTICLE 5.

Land-line connection.

Each of the High Contracting Parties undertakes to connect the coastal stations to the telegraph system by special wires or, at least, to take other measures which will insure a rapid exchange between the coastal stations and the telegraph system.

ARTICLE 6.

The High Contracting Parties shall notify one another of the names of coastal stations and stations on ship board referred to in Article 1, and also of all data, necessary to facilitate and accelerate the exchange of radiograms, as specified in the Regulations.

ARTICLE 7.

Each of the High Contracting Parties reserves the right to prescribe or permit at the stations referred to in Article 1, apart from the installation the data of which are to be published in conformity with Article 6, the installation and working of other devices for the purpose of establishing special radio communication without publishing the details of such devices.

ARTICLE 8.

Interference.

The working of the radio stations shall be organized as far as possible in such manner as not to disturb the service of other radio stations.

ARTICLE 9.

Radio stations are bound to give absolute priority to calls of distress from whatever source, to similarly answer such calls and to take such action with regard thereto as may be required.

ARTICLE 10.

Rates.

The charge for a radiogram shall comprise, according to the circumstances:

1. (a) The coastal rate, which shall fall to the coastal station;

(b) The shipboard rate, which shall fall to the shipboard station.

2. The charge for transmission over the telegraph lines, to be computed according to the ordinary rules.

3. The charges for transit through the intermediate coastal or shipboard stations and the charges for special services requested by the sender.

The coastal rate shall be subject to the approval of the Government of which the coastal station is dependent, and the shipboard rate to the approval of the Government of which the ship is dependent.

ARTICLE 11.

The provisions of the present Convention are supplemented by Regulations, which shall have the same force and go into effect at the same time as the Convention.

The provisions of the present Convention and of the Regulations relating thereto may at any time be modified by the High Contracting Parties by common consent. Conferences of plenipotentiaries having

power to modify the Convention and the Regulations, shall take place from time to time; each conference shall fix the time and place of the next meeting.

ARTICLE 12.

Such conferences shall be composed of delegates of the Governments of the contracting countries.

In the deliberations each country shall have but one vote.

If a Government adheres to the Convention for its colonies, possessions or protectorates, subsequent conferences may decide that such colonies, possessions or protectorates, or a part thereof, shall be considered as forming a country as regards the application of the preceding paragraph. But the number of votes at the disposal of one Government, including its colonies, possessions or protectorates, shall in no case exceed six.

The following shall be considered as forming a single country for the application of the present Article:

German East Africa
German Southwest Africa
Kamerun
Togo Land
German Protectorates in the Pacific
Alaska
Hawaii and the other American possessions in Polynesia
The Philippine Islands
Porto Rico and the American possessions in the Antilles
The Panama Canal Zone
The Belgian Congo
The Spanish Colony of the Gulf of Guinea
French East Africa
French Equatorial Africa
Indo-China
Madagascar
Tunis
The Union of South Africa
The Australian Federation
Canada
British India
New Zealand
Eritrea
Italian Somaliland
Chosen, Formosa, Japanese Sakhalin and the leased territory of Kwantung.
The Dutch Indies
The Colony of Curacao
Portuguese West Africa
Portuguese East Africa and the Portuguese possessions in Asia
Russian Central Asia (littoral of the Caspian Sea)
Bokhara
Khiva
Western Siberia (littoral of the Arctic Ocean).
Eastern Siberia (littoral of the Pacific Ocean).

ARTICLE 13.

Berne bureau.

The International Bureau of the Telegraph Union shall be charged with collecting, coordinating and publishing information of every kind relating to radiotelegraphy, examining the applications for changes in the Convention or Regulations, promulgating the amendments adopted, and generally performing all administrative work referred to it in the interest of international radiotelegraphy.

The expenses of such institution shall be borne by all the contracting countries.

ARTICLE 14.

Rates.

Each of the High Contracting Parties reserves to itself the right of fixing the terms on which it will

receive radiograms proceeding from or intended for any station, whether on shipboard or coastal, which is not subject to the provisions of the present convention.

If a radiogram is received the ordinary rates shall be applicable to it.

Any radiogram proceeding from a station on shipboard and received by a coastal station of a contracting country, or accepted in transit by the administration of a contracting country, shall be forwarded.

Any radiogram intended for a vessel shall also be forwarded if the administration of the contracting country has accepted it originally or in transit from a non-contracting country, the coastal station reserving the right to refuse transmission to a station on shipboard subject to a non-contracting country.

ARTICLE 15.

The provisions of Articles 8 and 9 of this Convention are also applicable to radio installation other than those referred to in Article 1.

ARTICLE 16.

Governments which are not parties to the present Convention shall be permitted to adhere to it upon their request. Such adherence shall be communicated through diplomatic channels to the contracting Government in whose territory the last conference shall have been held, and by the latter to the remaining Governments

The adherence shall carry with it to the fullest extent acceptance of all the clauses of this Convention and admission to all of the advantages stipulated therein.

The adherence to the Convention by the Government of a country having colonies, possessions or protectorates shall not carry with it the adherence of its colonies, possessions or protectorates unless a declaration to that effect is made by such Government. Such colonies, possessions and protectorates, as a whole or each of them, separately, may form the subject of a separate adherence or a separate denunciation within the provision of the present Article and of Article 22.

ARTICLE 17.

The provisions of Articles 1, 2, 3, 5, 6, 7, 8, 11, 12 and 17 of the International Telegraph Convention of St. Petersburg of July 10-22, 1875, shall be applicable to international radiotelegraphy. [See translation of the Articles of the International Telegraph Convention.]

ARTICLE 18.

In case of disagreement between two or more contracting Governments regarding the interpretation or execution of the present Convention or of the Regulations referred to in Article 11, the question in dispute may, by mutual agreement, be submitted to arbitration. In such case each of the Governments concerned shall choose another Government not interested in the question at issue.

The decision of the arbiters shall be arrived at by the absolute majority of votes.

In case of a division of votes, the arbiters shall choose, for the purpose of settling the disagreement, another contracting Government which is likewise a stranger to the question at issue. In case of failure to agree on a choice, each arbiter shall propose a disinterested contracting Government, and lots shall be drawn between the Governments proposed. The drawing of the lots shall fall to the Government within whose territory the international bureau provided for in Article 13 shall be located.

ARTICLE 19.

The High Contracting Parties bind themselves to take, or propose to their respective legislatures, the necessary measures for insuring the execution of the present Convention.

ARTICLE 20.

The High Contracting Parties shall communicate to one another any laws already framed, or which may be framed, in their respective countries relative to the object of the present Convention.

ARTICLE 21.

The High Contracting Parties shall preserve their entire liberty as regards radio installations other than provided for in Article 1, especially naval and military installations, and stations used for communication between fixed points. All such installations and stations shall be subject only to the obligations provided for in Articles 8 and 9 of the Present Convention.

However, when such installations are used for public maritime service they shall conform, in the execution of such service, to the provisions of the Regulations as regards the mode of transmission and rates.

On the other hand, if coastal stations are used for general public service with ships at sea and also for communication between fixed points, such stations shall not be subject, in the execution of the last named service, to the provisions of the Convention except for the observance of Articles 8 and 9 of this Convention.

Nevertheless, fixed stations used for correspondence between land and land shall not refuse the exchange of radiograms with another fixed station on account of the system adopted by such station; the liberty of each country shall, however, be complete as regards the organization of the service for correspondence between fixed points and the nature of the correspondence to be offered by the stations reserved for such service.

ARTICLE 22.

The present Convention shall go into effect on the 1st day of July, 1913, and shall remain in force for an indefinite period or until the expiration of one year from the day when it shall be denounced by any of the contracting parties.

Such denunciation shall affect only the Government in whose name it shall have been made. As regards the other Contracting Powers, the Convention shall remain in force.

ARTICLE 23.

The present Convention shall be ratified and the ratifications exchanged at London with the least possible delay.

In case one or several of the High Contracting Parties shall not ratify the Convention, it shall nevertheless be valid as to the Parties which have ratified it.

In witness whereof the respective plenipotentiaries have signed one copy of the Convention, which shall be deposited in the archives of the British Government, and a copy of which shall be transmitted to each Party.

Done at London, July 5, 1912.

[Translation.]

FINAL PROTOCOL.

At the moment of signing the Convention adopted by the International Radiotelegraph Conference of London, the undersigned plenipotentiaries have agreed as follows:

I.

The exact nature of the adherence notified on the part of Bosnia-Herzegovina not yet being determined, it is recognized that one vote shall be assigned to Bosnia-Herzegovina but that a decision will be necessary at a later date as to whether this vote belongs to Bosnia-Herzegovina in virtue of the second paragraph of Article 12 of the Convention, or whether this vote is accorded to it in conformity with the provisions of the third paragraph of that article.

II.

Note is taken of the following declaration:

The Delegation of the United States declares that its government is under the necessity of abstaining from all action with regard to rates, because the transmission of radiograms as well as of ordinary telegrams in the United States is carried on, wholly or in part, by commercial or private companies.

III.

Note is likewise taken of the following declaration:

The Government of Canada reserves the right to fix separately, for each of its coastal stations, a total maritime rate for radiograms proceeding from North America and destined for any ship whatever, the coastal rate amounting to three-fifths and the shipboard rate to two-fifths of the total rate.

In witness whereof the respective plenipotentiaries have drawn up the present Final Protocol, which shall be of the same force and effect as though the provisions thereof had been embodied in the text of the Convention itself to which it has reference, and they have signed one copy of the same, which shall be deposited in the archives of the British Government, and a copy of which shall be transmitted to each of the Parties.

Done at London, July 5, 1912.

SERVICE REGULATIONS AFFIXED TO THE INTERNATIONAL RADIOTELEGRAPHIC CONVENTION, LONDON, 1912.

[Translation.]

ORGANIZATION OF RADIO STATIONS.

ARTICLE I.

Service regulations. Progress.

The choice of radio apparatus and devices to be used by the coastal stations and stations on shipboard shall be unrestricted. The installation of such stations shall as far as possible keep pace with scientific and technical progress.

ARTICLE II.

Wave lengths.

Two wave lengths, one of 600 meters and the other of 300 meters, are authorized for general public service. Every coastal station opened to such service shall be equipped in such manner as to be able to use these two wave lengths, one of which shall be designated as the normal wave length of the station. During the whole time that a coastal station is open it shall be in condition to receive calls according to its normal wave length. For the correspondence specified under paragraph 2 of Article XXXV, however, a wave length of 1,800 meters shall be used. In addition, each Government may authorize in coastal stations the employment of other wave lengths designed to insure long-range service or any service other than for general public correspondence established in conformity with the provisions of the Convention under the reservation that such wave lengths do not exceed 600 meters or that they do exceed 1,600 meters.

In particular, stations used exclusively for sending signals designed to determine the position of ships shall not employ wave lengths exceeding 150 meters.

ARTICLE III.

1. Every station on shipboard shall be equipped in such manner as to be able to use wave lengths of 600 meters and of 300 meters. The first shall be the normal wave length and may not be exceeded for transmission except in the case referred to under Article XXXV (paragraph 2).

Other wave lengths, less 600 meters, may be used in special cases and under the approval of the managements to which the coastal and shipboard stations concerned are subject.

2. During the whole time that a station on shipboard is open it shall be able to receive calls according to its normal wave length.

3. Vessels of small tonnage which are unable to use a wave length of 600 meters for transmission, may be authorized to employ exclusively the wave length of 300; they must be able to receive a wave length of 600 meters.

ARTICLE IV.

Wave lengths.

Communication between a coastal station and a station on shipboard shall be exchanged on the part of both by means of the same wave length. If, in a particular case, communication is difficult, the two stations may by mutual consent, pass from the wave length with which they are communicating to the other regulation wave length. Both stations shall resume their normal wave length when the exchange of

radiograms is finished.

ARTICLE V.

Berne list.

1. The International Bureau shall draw up, publish, and revise from time to time an official chart showing the coastal stations, their normal ranges, the principal lines of navigation, and the time normally taken by ships for the voyage between the different ports of call.

2. It shall draw up and publish a list of radio stations of the class referred to in Article I of the Convention, and from time to time supplements covering additions and modifications. Such list shall contain for each station the following data:

(1) In the case of coastal stations; name, nationality and geographical location indicated by the territorial sub-division and the latitude and longitude of the place; in the case of stations on shipboard; name and nationality of the ship; when the case arises, the name and address of the party working the station;

(2) The call letters (the calls shall be distinguishable from one another and each must be formed of a group of three letters);

(3) The normal range;

(4) The radio system with the characteristics of the transmitting system (musical sparks, tonality expressed by the number of double vibrations, etc.);

(5) The wave lengths used (the normal wave length to be underscored);

(6) The nature of the services carried on;

(7) The hours during which the station is open;

(8) When the case arises, the hour and method of transmitting time signals and meteorological telegrams;

(9) The coastal rate or shipboard rate.

3. The list shall contain such data related to radio stations other than those specified in Article I of the Convention as may be communicated to the International Bureau by the management of the Radio Service ("administration") to which such stations are subject, provided that such managements are either adherents to the Convention or, if not adherents, have made the declaration refered to in Article XLVIII.

4. The following notations shall be adopted in documents for use by the International Service to designate radio stations:

PG Station open to general public correspondence.
PR Station open to limited public correspondence.
P Station of private interest.
O Station open exclusively to official correspondence.
N Station having continuous service.
X Station having no fixed working hours.

5. The name of a station on shipboard appearing in the first column of the list shall be followed, in case there are two or more vessels of the same name, by the call letters of such station.

ARTICLE VI.

Superfluous signals.

The exchange of superfluous signals and words is prohibited to stations of the class referred to in Article 1 of the Convention. Experiments and practice will be permitted in such stations in so far as they do not interfere with the service of other stations.

Practice shall be carried on with wave lengths different from those authorized for public correspondence with the minimum of power necessary.

ARTICLE VII.

Reduced power.

1. All stations are bound to carry on the service with the minimum of energy necessary to insure safe communication.

2. Every coastal or shipboard station shall comply with the following requirements:

(a) The waves sent out shall be as pure and as little damped as possible;

In particular, the use of transmitting devices in which the waves sent out are obtained by means of sparks directly in the aerial (plain aerial) shall not be authorized except in cases of distress.

It may, however, be permitted in the case of certain special stations (those of small vessels for example) in which the primary power does not exceed 50 watts.

(b) The apparatus shall be able to transmit and receive at a speed equal to at least 20 words a minute, words to be counted at a rate of 5 letters each.

New installation using more than 50 watts shall be equipped in such a way as to make it possible to obtain with ease several ranges less than the normal range, the shortest being approximately 15 nautical miles. Existing installations using more than 50 watts shall be remodeled, wherever possible, so as to comply with the foregoing provisions.

(c) Receiving apparatus shall be able to receive, with the greatest possible protection against interference, transmissions of the wave lengths specified in the present Regulations, up to 600 meters.

Fog signals.

3. Stations serving solely for determining the position of ships (radiophares) shall not operate over a radius greater than 30 nautical miles.

ARTICLE VIII.

Range.

Independently of the general requirements specified under Article VII, stations on shipboard shall likewise comply with the following requirements:

(a) The power transmitted to the radio apparatus, measured at the terminals of the generator of the station, shall not, under normal conditions, exceed one kilowatt.

(b) Subject to the provisions of Article XXXV, paragraph 2, power exceeding one kilowatt may be employed when the vessel finds it necessary to correspond while more than 200 nautical miles distant from the nearest coastal station, or when, owing to unusual circumstances, communication can be established only by means of an increase of power.

ARTICLE IX.

License.

1. No station on shipboard shall be established or worked by private enterprise without a license issued by the Government to which the vessel is subject.

Stations on board of ships having their port of registry in a colony, possession, or protectorate may be described as subject to the authority of such colony, possession, or protectorate.

2. Every shipboard station holding a license issued by one of the contracting Governments shall be considered by the other Governments as having an installation fulfilling the requirements stipulated in the present Regulations.

Competent authorities of the countries at which the ship calls may demand the production of the license. In default of such production, these authorities may satisfy themselves as to whether the radio installations of the ship fulfill the requirements imposed by the present regulations.

When the management of the radio service of a country is convinced by its working that a station on shipboard does not fulfill the requirements, it shall, in every case, address a complaint to the management of the radio service of the country to which such ship is a subject. The subsequent procedure, when necessary, shall be the same as that prescribed in Article XII, paragraph 2.

ARTICLE X.

Operators.

1. The service of the station on shipboard shall be carried on by a telegraph operator holding a certificate issued by the Government to which the vessel is subject, or, in case of necessity and for one voyage only, by some other adhering Government.

2. There shall be two classes of certificates:

The first class certificate shall attest the professional efficiency of the operator as regards:

(a) Adjustment of the apparatus and knowledge of its functioning;

(b) Transmission and acoustic reception at the rate of not less than 20 words a minute;

(c) Knowledge of the regulations governing the exchange of radio correspondence.

The second class certificate may be issued to operators who are able to transmit and receive at a rate of only 12 to 19 words a minute but who, in other respects, fulfill the requirements mentioned above. Operators holding second class certificates may be permitted on:

(a) Vessels which use radiotelegraphy only in their own service and in the correspondence of their crews, fishing vessels in particular;

(b) All vessels, as substitutes, provided such vessels have on board at least *one* operator holding a first-class certificate. However, on vessels classed under the first category indicated in Article XIII, the service shall be carried on by at least two telegraph operators holding first-class certificates.

In the stations on shipboard, transmissions shall be made only by operators holding first or second-class certificates except in cases of necessity where it would be impossible to conform to this provision

3. The certificate shall furthermore state that the Government has bound the operator to secrecy with regard to the correspondence.

4. The radio service of the station on shipboard shall be under the superior authority of the commanding officer of the ship.

ARTICLE XI.

Emergency equipment.

Ships provided with radio installations and classed under the first two categories indicated in Article XIII are bound to have radio installations for distress calls all the elements of which shall be kept under conditions of the greatest possible safety to be determined by the Government issuing the license. Such emergency installation shall have their own source of energy, be capable of quickly being set into operation, of functioning for at least six hours, and have a minimum range of 80 nautical miles for ships of the first category and 50 miles for those of the second. Such emergency installations shall not be required in the case of vessels the regular installations of which fulfill the requirements of the present Article.

ARTICLE XII.

Violations.

If the management of the radio service of a country has knowledge of any infraction of the Convention or of the Regulations committed in any of the stations authorized by it, it shall ascertain the facts and fix the responsibility.

In the case of stations on shipboard, if the operator is responsible for such infraction, the management of the radio service shall take the necessary measures, and, if the necessity should arise, withdraw the certificate. If it is ascertained that the infraction is the result of the condition of the apparatus or of instructions given the operator, the same method shall be pursued with regard to the license issued to the vessel.

2. In cases of repeated infractions chargeable to the same vessel, if the representations made to the management of the country to which the vessel is subject by that of another country remain without effect, the latter shall be at liberty, after giving due notice, to authorize its coastal stations not to accept communications proceeding from the vessel at fault. In case of disagreement between the managements of the radio service of two countries, the question shall be submitted to arbitration at the request of either of the two Governments concerned. The procedure is indicated in Article 18 of the Convention.

2. HOURS OF SERVICE OF STATIONS.

ARTICLE XIII.

Hours of service.

(a) Coastal stations:

1. The service of coastal stations shall, as far as possible be constant, day and night, without interruption.

Certain coastal stations, however, may have a service of limited duration. The management of the radio service of each country shall fix the hours of service.

2. The coastal stations whose service is not constant shall not close before having transmitted all their radiograms to the vessels which are within their radius of action, nor before having received from such vessels all the radiograms of which notice has been given. This provision is likewise applicable when vessels signal their presence before the actual cessation of work.

Classification of ship stations.

(b) Stations on shipboard:

3. Stations on shipboard shall be classed under three categories:

(1) Stations having constant service;
(2) Stations having a service of limited duration;
(3) Stations having no fixed working hours.

When the ship is under way, the following shipboard stations shall have an operator constantly listening in; 1st, Stations of the first category; 2nd, Those of the second category during the hours in which they are open to service. During the remaining hours, the last named stations shall have an operator at the radio instrument listening in during the first ten minutes of each hour. Stations of the third category are not bound to perform any regular service of listening in.

It shall fall to the Governments issuing the licenses specified in Article IX to fix the category in which the ship shall be classed as regards its obligations in the matter of listening in. Mention shall be made of such classification in the license.

3. FORM AND POSTING OF RADIOGRAMS.

ARTICLE XIV.

Messages forms.

1. Radiograms shall show, as the first word of the preamble, that the service is "radio."

2. In the transmission of radiograms proceeding from a ship at sea, the date and hour of posting at the shipboard station shall be stated in the preamble.

3. Upon forwarding a radiogram over the telegraph system, the coastal station shall show thereon as the office of origin, the name of the ship of origin as it appears in the list, and also when the case arises, that of the last ship which acted as intermediary. These data shall be followed by the name of the coastal station.

ARTICLE XV.

The address of radiograms intended for ships shall be as complete as possible.

It shall embrace the following:

(a) The name or title of the addressee, with additional designations, if any;

(b) The name of the vessel as it appears in the first column of the list;

(c) The name of the coastal station as it appears in the list.

The name of the ship, however, may be replaced, at the sender's risk, by the designation of the route to be followed by such vessel, as determined by the names of the ports of departure and destination or by any other equivalent information.

2. In the address, the name of the ship as it appears in the first column of the list, shall, in all cases and independently of its length, be counted as one word.

3. Radiograms framed with the aid of the International Code of Signals shall be transmitted to their destination without being translated.

4. RATES.

ARTICLE XVI.

Rates.

1. The coastal rate and the shipboard rate shall be fixed in accordance with the tariff per word, pure and simple, on the basis of an equitable remuneration for the radio work, with an optional minimum rate per radiogram.

The coastal rate shall not exceed 60 centimes (11.6 cents) a word, and the shipboard rate shall not exceed 40 centimes (7.7 cents) a word. However, each management shall be at liberty to authorize coastal and shipboard rates higher than such maxima in the case of stations of ranges exceeding 400 nautical miles, or of stations whose work is exceptionally difficult owing to physical conditions in connection with the installation or working of the same.

The optional minimum rate per radiogram shall not be higher than the coastal rate or shipboard rate for a radiogram of ten words.

2. In the case of radiograms proceeding from or destined for a country and exchanged directly with the coastal stations of such country, the rate applicable to the transmission over the telegraph lines shall not, on the average, exceed the inland rate of such country.

Such rate shall be computed per word, pure and simple, with an optional minimum rate which shall not exceed the rate for ten words. It shall be stated in francs by the management of the radio service of the country to which the coastal station is subject.

In the case of countries of the European system, with the exception of Russia and Turkey, there shall be but one rate for the territory of each country.

ARTICLE XVII.

1. When a radiogram proceeding from a ship and intended for the coast passes through one or two shipboard stations, the charges shall comprise, in addition to the rates of the shipboard station of origin, the coastal station and the telegraph lines, the shipboard rate of each of the ships which have participated in the transmission.

2. The sender of a radiogram proceeding from the coast and intended for a ship may require that his message be transmitted by way of one or two stations on shipboard; he shall deposit for this purpose an amount equal to the radio and telegraph rates and, in addition, a sum to be fixed by the office of origin, as surety for the payment to the intermediary shipboard stations of the transit rates fixed by paragraph 1. He shall further pay, at his option, either the rate for a telegram of five words or the price of the postage on a

letter to be sent by the coastal station to the office of origin giving the necessary information for the liquidation of the amounts deposited.

The radiogram shall then be accepted at the sender's risk; it shall show before the address the prepaid instruction, to wit: "X retransmissions telegraph" or "X retransmissions letter" according to whether the sender desired the information necessary for the liquidation of the deposits to be furnished by telegram or by letter.

3. The rate for radiograms proceeding from a ship intended for another ship, and forwarded through one or two intermediary coastal stations shall comprise:

The shipboard rates of the two ships, the coastal rate of the coastal station or two coastal stations, as the case may be, and the telegraph rate, when necessary, applicable to the transmission between the two coastal stations.

4. The rate for radiograms exchanged between ships without the intervention of a coastal station shall comprise the shipboard rates of the vessels of origin and destination together with the shipboard rates of the intermediary stations.

5. The coastal and shipboard rates accruing to the stations of transit shall be the same as those fixed for such stations when they are stations of origin or destination. In no case shall they be collected more than once.

6. In the case of every coastal station acting as intermediary, the rate to be collected for the service of transit shall be the highest coastal rate applicable to direct communication with the two ships concerned.

ARTICLE XVIII.

The country within whose territory a coastal station is established which serves as intermediary for the exchange of radiograms between a station on board ship and another country shall be considered, so far as the application of telegraph rates is concerned, as the country of origin or of destination of such radiograms, and not as the country of transit.

5. COLLECTION OF CHARGES.

ARTICLE XIX.

Collection of charges.

The total charge for radiograms shall be collected of the sender, with the exception of:

(1) Charges for special delivery (Art. LVIII, Par. 1, of the Telegraph Regulations); (2) Charges applicable to inadmissible combinations or alterations of words noted by the office or station of destination (Art. XIX, par. 9 of the Telegraph Regulations) such charges being collected of the addressee.

Stations on shipboard shall to that end have the necessary tariffs. They shall be at liberty, however, to obtain information from coastal stations on the subject of rates for radiograms for which they do not possess all the necessary data.

2. The counting of words by the office of origin shall be conclusive in the case of radiograms intended for ships and that of the shipboard station of origin shall be conclusive in the case of radiograms proceeding from ships, both for purposes of transmission and of the international accounts. However, when the radiogram is worded wholly or in part, either in one of the languages of the country of destination in the case of radiograms proceeding from ships, or in one of the languages of the country to which the ship is subject, in the case of radiograms intended for ships, and contains combinations or alterations of words contrary to the usage of such language, the bureau or shipboard station of destination, as the case may be, shall have the right to recover from the addressee the amount of charge not collected. In case of refusal to pay, the radiogram may be withheld.

6. TRANSMISSION OF RADIOGRAMS.

(A) SIGNALS OF TRANSMISSION.

ARTICLE XX.

Code.

The signals to be employed are those of Morse International Code.

ARTICLE XXI.

Distress.

Ships in distress shall use the following signal:

•••———•••

repeated at brief intervals, followed by the necessary particulars.

As soon as a station hears the signal of distress it shall cease all correspondence and not resume it until after it has made sure that the correspondence to which the call for assistance has given rise is terminated.

Stations which hear a signal of distress shall conform to the instructions given by the ship making such signal as regards the order of the messages or their cessation.

In case the call letters of a particular station are added at the end of the series of calls for assistance, the answer to the call shall be incumbent upon that station alone unless such station fails to reply. If the call for assistance does not specify any particular station, every station hearing such call shall be bound to answer it.

ARTICLE XXII.

Abbreviations.

For the purpose of giving or requesting information concerning the radio service, stations shall make use of the signals contained in the list appended to the present Regulations.

(B) ORDER OF TRANSMISSION.

ARTICLE XXIII.

Order of business.

Between two stations radiograms of the same order shall be transmitted one by one, by the two stations alternately, or in series of several radiograms, as the coastal station may indicate, provided the duration of the transmission of each series does not exceed fifteen minutes.

(C) METHOD OF CALLING RADIO STATIONS AND TRANSMISSION OF RADIOGRAMS.

ARTICLE XXIV.

Calling.

1. As a general rule, it shall be the shipboard station that calls the coastal station whether it has radiograms to transmit or not.
2. In waters where the radio traffic is very great (British Channel, etc.), a coastal station should not, as a general rule, be called by a shipboard station unless the former is within normal range of the shipboard station and not until the distance of the vessel from the coastal station is less than 75 per cent of the normal range of the latter.
3. Before proceeding to call, the coastal station or the station on shipboard shall adjust its receiving apparatus to its maximum sensibility and make sure that no other correspondence is being carried on within its radius of action; if it finds otherwise, it shall wait for the first pause, unless it is convinced that its call will not be likely to disturb the correspondence in progress. The same applies in case the station desires to answer a call.
4. For calling, every station shall use the normal wave of the station it wishes to call.
5. If in spite of these precautions the transmission of a radiogram is impeded at any place, the call shall cease upon the first request from a coastal station open to public correspondence. The latter station shall in such case indicate the approximate length of time it will be necessary to wait.
6. The station on shipboard shall make known to every coastal station to which it has signaled its presence the moment at which it proposes to cease its operations and the probable duration of the interruption.

ARTICLE XXV.

1. The call shall comprise the signal

—•—•—

the call letters of the station called transmitted three times, the word "from" (de) followed by the call letters of the sending station transmitted three times.

2. The called station shall answer by making the signal

—·—·—

followed by the call letters of the corresponding station transmitted three times, the word "from," its own call letters, and the signal

—·—

3. Stations desiring to enter into communication with ships, without, however, knowing the names of the ships within their radius of action, may employ the signal —·—·——·— (signal of inquiry). The provisions of paragraphs 1 and 2 are likewise applicable to the transmission of a signal of inquiry and to the answer to such signal.

ARTICLE XXVI.

Repeating.

If a station called does not answer the call (Article XXV) transmitted three times at intervals of two minutes, the call shall not be resumed until after an interval of fifteen minutes, the station issuing the call having first made sure of the fact that no radio correspondence is in progress.

ARTICLE XXVII.

High power.

Every station which has occasion to transmit a radiogram requiring the use of high power shall first send out three times the signal of warning ——··—— with the minimum of power necessary to reach the neighboring stations. It shall not begin to transmit with high power until 30 seconds after sending the signal of warning.

ARTICLE XXVIII.

Order of information.

1. As soon as the coastal station has answered, the shipboard station shall furnish it with the following data in case it has messages to transmit; such data shall likewise be furnished upon request from the coastal station:

(a) The approximate distance, in nautical miles, of the vessel from the coastal station;
(b) The position of the vessel indicated in a concise form and adapted to the circumstances of the case;
(c) Her next port of call;
(d) The number of radiograms, if they are of normal length, or the number of words if the messages are unusually long.

The speed of the ship in nautical miles shall also be given if specially requested by the coastal station.

2. The coastal station shall answer stating, as provided in paragraph 1, either the number of radiograms or the number of words to be transmitted to the ship, and also the order of transmission.

3. If the transmission can not take place immediately, the coastal station shall inform the station on shipboard of the approximate length of time that it will be necessary to wait.

4. If the shipboard station called can not receive for the moment, it shall inform the station calling of the approximate length of time that it will be necessary to wait.

5. In the exchange of messages between two stations on shipboard, it shall fall to the station called to fix the order of transmission.

ARTICLE XXIX.

Authority of coast stations.

When a coastal station receives calls from several shipboard stations, it shall decide the order in which such stations shall be admitted to exchange their messages.

In fixing this order the coastal station shall be guided exclusively by the necessity of permitting each station concerned to exchange the greatest possible number of radiograms.

ARTICLE XXX.

Before beginning the exchange of correspondence the coastal station shall advise the shipboard station whether the transmission is to be effected in the alternate order or by series (Article XXIII); it shall then begin the transmission or follow up the preliminaries with the signal

–•–

ARTICLE XXXI.

Signals.

The transmission of the radiogram shall be preceded by the signal

–•–•–

and terminated by the signal

•–•–•

followed by the name of the sending station and by the signal

–•–

In the case of a series of radiograms, the name of the sending station and the signal –•– shall only be given at the end of the series.

ARTICLE XXXII.

Break.

When a radiogram to be transmitted contains more than 40 words, the sending station shall interrupt the transmission by the signal ••––•• after each series of about 20 words and shall not resume it until after it has obtained from the receiving station a repetition of the last word duly received, followed by the said signal, or, if the reception is good, by the signal –•–

In the case of transmission by series, acknowledgment of receipt shall be made after each radiogram.

Coastal stations engaged in the transmission of long radiograms shall suspend the transmission at the end of each period of 15 minutes, and remain silent for a period of three minutes before resuming the transmission.

Coastal and shipboard stations working under the conditions specified in Article XXXV, par. 2, shall suspend work at the end of each period of 15 minutes and listen in with a wave length of 600 meters during a period of three minutes before resuming the transmission.

ARTICLE XXXIII.

Repeating.

1. When the signals become doubtful every possible means shall be resorted to to finish the transmission. To this end the radiogram shall be transmitted three times at most at the request of the receiving station. If in spite of such triple repetition the signals are still unreadable the radiogram shall be canceled.

If no acknowledgment of receipt is received the transmitting station shall again call up the receiving station. If no reply is made after three calls the transmission shall not be followed up any further. In such case the sending station shall have the privilege of obtaining the acknowledgment of receipt through the medium of another radio station, using, when necessary, the lines of the telegraph system.

2. If in the opinion of the receiving station the radiogram, although imperfectly received, is nevertheless capable of transmission, said station shall enter the words "reception doubtful" at the end of the preamble and let the radiogram follow. In such case the management of the radio service of the country to which the

coastal station is subject shall claim the charges in conformity with Article XLII of the present Regulations. If, however, the shipboard station subsequently transmits the radiogram to another coastal station of the same management, the latter can claim only the rates applicable to a single transmission.

(D) ACKNOWLEDGEMENT OF RECEIPT AND CONCLUSION OF WORK.

ARTICLE XXXIV.

1. Receipt shall be acknowledged in the form prescribed by the International Telegraph Regulations; it shall be preceded by the call letters of the transmitting station and followed by those of the receiving station.

2. The conclusion of a correspondence between two stations shall be indicated by each of the two stations by means of the signal.

•••–•–

followed by its own call letters.

(E) DIRECTIONS TO BE FOLLOWED IN SENDING RADIOGRAMS.

ARTICLE XXXV.

Nearest station.

1. In general, the shipboard stations shall transmit their radiograms to the nearest coastal station.

Nevertheless, if a shipboard station has the choice between several coastal stations at equal or nearly equal distances, it shall give the preference to the one established on the territory of the country of destination or normal transit for its radiograms.

2. A sender on board a vessel shall, however, have the right to designate the coastal station through which he desires to have his radiogram transmitted. The station on shipboard shall then wait until such coastal station shall be the nearest.

In exceptional cases transmission may be made to a more distant coastal station, provided that:

(a) The radiogram is intended for the country in which such coastal station is situated and emanates from a ship subject to that country;

1,800-meter wave length.

(b) Both stations use for calling and transmission a wave length of 1,800 meters;

(c) Transmission with this wave length does not interfere with a transmission made by means of the same wave length by a nearer coastal station;

(d) The station on shipboard is more than 50 nautical miles distant from any coastal station given in the list. The distance of 50 miles may be reduced to 25 miles provided the maximum power at the terminals of the generator does not exceed 5 kilowatts and that the stations on shipboard are established in conformity with Articles VII and VIII. This reduction in the distance shall not be admissible in the seas, bays or gulfs of which the shores belong to one country only and of which the opening to the high sea is less than 100 miles wide.

7. DELIVERY OF RADIOGRAMS AT THEIR DESTINATION.

ARTICLE XXXVI.

Delivery of messages.

When for any cause whatever a radiogram proceeding from a vessel at sea and intended for the coast can not be delivered to the addressee, a notice of nondelivery shall be issued. Such notice shall be transmitted to the coastal station which received the original radiogram. The latter, after verifying the address, shall forward the notice to the ship, if possible, by the intervention, if need be, of another coastal station of the same country or of a neighboring country.

When a radiogram received by a shipboard station can not be delivered, the station shall notify the office of the origin by official notice. In the case of radiograms emanating from the coast, such notice shall be transmitted, whenever practicable, to the coastal station through which the radiogram has passed in transit; otherwise, to another coastal station of the same country or of a neighboring country.

ARTICLE XXXVII.

If the ship for which a radiogram is intended has not signalled her presence to the coastal station within the period designated by the sender, or, in the absence of such designation, by the morning of the 8th day

following, the coastal station shall so notify the office of origin which shall in turn inform the sender.

The latter shall have the right to ask, by a paid official notice, sent by either telegraph or mail and addressed to the coastal station, that his radiogram be held for a further period of 9 days for transmission to the vessel, and so on. In the absence of such request, the radiogram shall be put aside as not transmissible at the end of the 9th day (exclusive of the day of posting).

Nevertheless, if the coastal station is certain that the vessel has left its radius of action before it has been able to transmit the radiogram to her, such station shall immediately so notify the office of origin which shall without delay inform the sender of the cancellation of the message. The sender may, however, by a paid official notice, request the coastal station to transmit the radiogram the next time the vessel shall pass.

8. SPECIAL RADIOGRAMS.

ARTICLE XXXVIII.

Special messages.

The following radiograms only shall be accepted for transmission:

(1) Radiograms which answer prepaid. Such radiograms shall show before the address the indication "Answer prepaid" or "R P" supplemented by a statement of the amount paid in advance for the answer, thus: "Response Payee fr. x", or "R P fr. x";

The reply voucher issued by a station on shipboard shall carry with it the right to send, within the limits of its value, a radiogram to any destination whatever from the station on shipboard which has issued such voucher.

(2) Radiograms calling for repetition of message (for purposes of verification);

(3) Special delivery radiograms. Only, however, in cases where the amount of the charges for special delivery collected of the addressee. Countries which can not accept such radiograms shall make a declaration to this effect to the International Bureau. Special delivery radiograms with charges collected of the sender may be accepted when they are intended for the country within whose territory the corresponding station is located.

(4) Radiograms to be delivered by mail;

(5) Multiple radiograms;

(6) Radiograms calling for acknowledgment of receipt. But only as regards notification of the date and hour at which the coastal station shall have transmitted to the station on shipboard the radiogram addressed to the latter.

(7) Paid service notices. Except those requesting a repetition or information. Nevertheless all paid service notices shall be accepted in transmission over the telegraph lines.

(8) Urgent telegrams. But only in transmission over the telegraph lines and subject to the application of the International Telegraph Regulations.

ARTICLE XXXIX.

Radiograms may be transmitted by a coastal station to a ship, or by a ship to another ship, with a view to being forwarded by mail from a port of call of the ship receiving the radiogram.

Such radiogram shall not be entitled to any radio retransmission.

The address of such radiogram shall embrace the following:

(1)-The paid designation "mail" followed by the name of the port to which the radiogram is to be mailed;

(2) The name and complete address of the addressee;

(3) The name of the station on shipboard by which the radiogram is to be mailed;

(4) When necessary, the name of the coastal station.

Example: Mail Buenosaires 14 Calle Prat Valparaiso Avon Lizard.

The rate shall comprise, in addition to the radio and telegraph rates, a sum of 25 centimes (.048 cents) for the postage on the radiogram.

9. FILES.

ARTICLE XL.

Records and files.

The originals of radiograms together with the documents relating thereto retained by the managements of the radio service shall be kept, with all the necessary precautions as regards secrecy, for a period of at least fifteen months beginning with the month following that of the posting of the radiogram.

Such originals and documents shall, as far as practicable, be sent at least once a month by the shipboard stations to the management of the radio service to which they are subject.

10. REBATES AND REIMBURSEMENTS

ARTICLE XLI.

Accounts.

1. With regard to rebates and reimbursements, the International Telegraph Regulations shall be applicable, taking into account the restrictions specified in Article XXXVIII and XXXIX of the present Regulations and subject to the following reservations:

The time employed in the transmission of radiograms and the time that radiograms remain in a coastal station in the case of radiograms intended for ships, or in the station on shipboard in the case of radiograms proceeding from ships, shall not be counted as delays as regards rebates or reimbursements.

If the coastal station notifies the office of origin that a radiogram can not be transmitted to the ship addressed, the management of the radio service of the country of origin shall immediately instigate reimbursement to the sender of the coastal and shipboard rates relating to the radiogram. In such case, the refunded charges shall not enter into the accounts provided for by Article XLII, but the radiogram shall be mentioned therein as a memorandum.

Reimbursements shall be borne by the different managements of the radio service and private enterprises which have taken part in the transmission of the radiogram, each management or private enterprise relinquishing its share of the rate. Radiograms to which Articles 7 and 8 of the Convention of St. Petersburg are applicable shall remain subject, however, to the provisions of the International Telegraph Regulations, except when the acceptance of such radiograms is the result of an error made by the telegraph service.

2. When the acknowledgment of receipt of a radiogram has not reached the station which has transmitted the message, the charges shall be refunded only if the fact has been established that the radiogram is entitled to reimbursement.

11. ACCOUNTS AND PAYMENTS OF CHARGES.

ARTICLE XLII.

1. The coastal and shipboard charges shall not enter into the accounts provided for by the International Telegraph Regulations.

The accounts regarding such charges shall be liquidated by the managements of the radio service of the countries concerned. They shall be drawn up by the radio managements to which the coastal stations are subject, and communicated by them to the radio managements concerned. In cases where the working of the coastal stations is independent of the management of the radio service of the country, the party working such stations may be substituted, as regards the accounts, for the radio management of such country.

2. For transmission over the telegraph lines radiograms shall be treated, so far as the payment of rates is concerned, in conformity with the International Telegraph Regulations.

3. For radiograms proceeding from ships, the radio management to which the coastal station is subject shall charge the radio management to which the shipboard station of origin is subject with the coastal and ordinary telegraph rates, the total charges collected for answers prepaid, the coastal and telegraph rates collected for repetition of message (for purposes of verification), charges relating to special delivery (in the case provided for in Article XXXVIII), or delivery by mail, and those collected for additional copies (TM). The radio management to which the coastal station is subject shall credit, when the case arises, through the channel of the telegraph accounts and through the medium of the offices which have participated in the transmission of the radiograms, the radio management to which the office of destination is subject with the total charges relating to answers prepaid. With respect to the telegraph rates and the charges relating to special delivery or delivery by mail, and to additional copies, the procedure shall be as prescribed in the Telegraph Regulations, the coastal station being considered as the telegraph office of origin.

For radiograms intended for a country lying beyond the country to which the coastal station belongs, the telegraph charges to be liquidated in conformity with the above provisions shall be those which result either from tables "A" and "B" annexed to the International Telegraph Regulations, or from special arrangements concluded between the radio managements of adjacent countries and published by such managements, and not the charges which might be collected in accordance with the special provisions of Articles XXIII, par. 1, and Article XXVII, par. 1, of the Telegraph Regulations.

For radiograms and paid service notices intended for ships, the radio management to which the office of origin is subject shall be charged directly by that to which the coastal station is subject with the coastal and shipboard rates. However, the total charges relating to answers prepaid shall be credited, if there is occasion, from country to country, through the channel of the telegraph accounts, until they reach the radio management to which the coastal station is subject. As regards the telegraph charges and the charges relating to delivery by mail and additional copies, the procedure shall be as prescribed in the Telegraph Regulations. The radio management to which the coastal station is subject shall credit that to which the ship of destination is subject with the shipboard rate, if there is occasion, with the rates accruing to the intermediary shipboard stations, the total charge collected for answers prepaid, the shipboard rates for repetition of message (for purposes of verification), and the charges collected for the preparation of additional copies and for delivery by mail.

Paid service notices and answers prepaid shall be treated in the radio accounts in all respects the same as other radiograms.

For radiograms transmitted by means of one or two intermediary stations on shipboard, each one of such stations shall charge the shipboard station of origin, in the case of a radiogram proceeding from a ship, or that of destination, in the case of a radiogram intended for a ship, with the shipboard rate accruing to it for transit.

4. In general, the liquidation of accounts relating to correspondence between stations on shipboard shall be effected directly between the companies working such stations, the station of origin being charged by the station of destination.

5. The monthly accounts serving as a basis for the special accounts of radiograms shall be made out for each radiogram separately with all the necessary data within a period of six months from the month to which they refer.

6. The Governments reserve the right to enter into special agreements among themselves and with private companies (parties operating radio stations, shipping companies, etc.) with a view of adopting other provisions with regard to accounts.

12. INTERNATIONAL BUREAU.

ARTICLE XLIII.

Expenses of Berne bureau.

The additional expenses resulting from the work of the International Bureau so far as radio telegraphy is concerned shall not exceed 80,000 francs a year, exclusive of the special expenses arising from the convening of the International Conference.

The managements of the radio service of the contracting states shall, so far as contribution to the expenses is concerned, be divided into six classes, as follows:

1st Class:

Union of South Africa; Germany, United States of America; Alaska; Hawaii and the other American possessions in Polynesia; Philippine Islands; Porto Rico and the American possessions in the Antilles; Panama Canal Zone; Argentine Republic; Australia; Austria; Brazil; Canada; France; Great Britain; Hungary; British India; Italy; Japan; New Zealand; Russia; Turkey.

2nd Class:

Spain.

3rd Class:

Russian Central Asia (littoral of the Caspian Sea); Belgium; Chile, Chosen, Formosa, Japanese Sakhalin and the leased territory of Kwantung; Dutch Indies; Norway; Netherlands; Portugal; Roumania; Western Siberia (littoral of the Arctic Ocean); Eastern Siberia (littoral of the Pacific Ocean;) Sweden.

4th Class:

German East Africa; German Southwest Africa; Kamerun; Togo Land; German Protectorates in the Pacific; Denmark; Egypt; Indo-China; Mexico; Siam; Uruguay.

5th Class:

French West Africa; Bosnia-Herzegovina; Bulgaria; Greece; Madagascar; Tunis.

6th class:

French Equatorial Africa; Portuguese West Africa; Portuguese East Africa and the Portuguese possessions in Asia; Bokhara; Belgian Congo; Colony of Curacao; Spanish Colony of the Gulf of Guinea; Eritrea; Khiva; Morocco; Monaco; Persia; San Marino; Italian Somaliland.

ARTICLE XLIV.

Berne list.

The management of the radio service of the different countries shall forward to the International Bureau

a table in conformity with the annexed blank, containing the data enumerated in said table for stations such as referred to in Article V of the Regulations. Changes occurring and additional data shall be forwarded by the radio managements to the International Bureau between the 1st and 10th day of each month. With the aid of such data the International Bureau shall draw up the list provided for in Article V. The list shall be distributed to the radio managements concerned. The list and the supplements thereto may also be sold to the public at the cost price.

The International Bureau shall see to it that the same call letters for several radio stations shall not be adopted.

13. METEOROLOGICAL RADIOGRAMS, TIME SIGNALS AND OTHER RADIOGRAMS.

ARTICLE XLV.

1. The managements of the radio service shall take the necessary steps to supply their coastal stations with meteorological radiograms containing indications concerning the district of such stations. Such radiograms, the text of which shall not exceed 20 words, shall be transmitted to ships upon request. The rate for such meteorological radiograms shall be carried to the account of the ships to which they are addressed.

2. Meteorological observations made by certain vessels designated for this purpose by the country to which they are subject, may be transmitted once a day, as paid service notices, to the coastal stations authorized to receive the same by the managements concerned, who shall likewise designate the meteorological offices to which such observations shall be addressed by the coastal stations.

Time signals.

Interference.

3. Time signals and meteorological radiograms shall be transmitted one after the other in such a way that the total time occupied in their transmission shall not exceed ten minutes. As a general rule, all radio stations whose transmissions might interfere with the reception of such signals and radiograms, shall remain silent during their transmission in order that all stations desiring it may be able to receive the same. Exception shall be made in cases of distress calls and of state telegrams.

4. The managements of the radio service shall give to agencies of maritime information such data regarding losses and casualties at sea or other information of general interest to navigation, as the coastal stations may properly report.

14. MISCELLANEOUS PROVISIONS.

ARTICLE XLVI.

Ship to ship business.

The exchange of correspondence between shipboard stations shall be carried on in such a manner as not to interfere with the service of the coastal stations, the latter, as a general rule being accorded the right of priority for the public service.

ARTICLE XLVII.

Relaying.

Coastal stations and stations on shipboard shall not be bound to participate in the retransmission of radiograms except in cases where direct communication cannot be established between the stations of origin and destination.

The number of such retransmissions shall, however, be limited to two.

In the case of radiograms intended for the coast, retransmission shall take place only for the purpose of reaching the nearest coastal station.

Retransmission shall in every case be subject to the condition that the intermediate station which receives the radiogram in transit is in a position to forward it.

ARTICLE XLVIII.

If the route of a radiogram is partly over telegraph lines, or through radio stations subject to a non-contracting Government, such radiograms may be transmitted provided the management of the radio service to which such lines or stations are subject have declared that, if the occasion should arise, they will comply with such provisions of the Convention and of the Regulations as are indispensable to the regular transmission of radiograms and that the payment of charges is insured. Such declaration shall be made to the International Bureau and communicated to the offices of the Telegraph Union.

ARTICLE XLIX.

Modifications of the present regulations which may be rendered necessary in consequence of the decisions of subsequent Telegraph Conferences shall go into effect on the date fixed for the application of the provisions adopted by each one of such conferences.

ARTICLE L.

Telegraph regulations. See telegraph regs.

The provisions of the International Telegraph Regulations shall be applicable analogously to radio correspondence in so far as they are not contrary to the provisions of the present regulations. The following provisions of the Telegraph Regulations, in particular, shall be applicable to radio correspondence: Article XXVII, paragraphs 3 to 6, relating to the collection of charges; Articles XXVI and XLI relating to the indication of the route to be followed; Article LXXV, paragraph 1, LXXVIII, paragraphs 2 to 4, and LXXIX, paragraphs 2 and 4, relating to the preparation of accounts. However:-(l) The period of six months provided by paragraph 2 of Article LXXIX of the Telegraph Regulations for the verification of accounts shall be extended to nine months in the case of radiograms; (2) The provisions of Article XVI, paragraph 2, shall not be considered as authorizing gratuitous transmission, through radio stations, of service telegrams relating exclusively to the telegraph service, nor free transmission over the telegraph lines of service telegrams relating exclusively to the radio service; (3) The provisions of Article LXXIX, paragraphs 3 and 5, shall not be applicable to radio accounts. As regards the application of the provisions of the Telegraph Regulations, coastal stations shall be considered as offices of transit except when the Radio Regulations expressly stipulate that such stations shall be considered as offices of origin or of destination.

In conformity with Article 11 of the Convention of London, the present Regulations shall go into effect on the first day of July, 1913.

In witness whereof the respective plenipotentiaries have signed one copy of these Regulations, which shall be deposited in the archives of the British Government, and a copy of which shall be transmitted to each of the Parties.

(SUPPLEMENT TO ARTICLE XLIV OF THE REGULATIONS.)

Radio Management of------. Service Particulars of Radio Stations.

- (a) COASTAL STATIONS.
    - Name.
    - Nationality.
    - Geographic location: E. East longitude. O. West longitude. N. North latitude. S. South latitude. Territorial subdivisions.
    - Call letters.
    - Normal range in nautical miles.
    - Radio system with the characteristics of the transmitting system.
    - Wave lengths in meters (the normal wave length to be underscored.)
    - Nature of service furnished.
    - Hours during which station is open (local standard time).
    - Coastal rate, per word in francs, minimum rate per radiogram, in francs.
    - Remarks. (When necessary hour and manner of sending time signals and meteorological radiograms.)
- (b) SHIPBOARD STATIONS.
    - Name.
    - Nationality.
    - Call letters.
    - Normal range. In nautical miles.
    - Radio system with the characteristics of the transmitting system.
    - Wave lengths in meters.
    - Nature of service furnished.
    - Hours during which the station is open.
    - Shipboard rate per word in francs, minimum rate per radiogram in francs (1)War vessels (2) Merchant vessels.
    - Remarks. (When necessary name and address of the party working the station.)

(SUPPLEMENT TO ARTICLE XXII OF THE REGULATIONS.)

List of Abbreviations to be used in Radio Communications.

Abbreviation.	Question.	Answer or Notice.
C Q	-.-. --.-	Signal of enquiry made by a station desiring to communicate.
T R	- .-.	Signal announcing the sending of particulars concerning a station on shipboard (Art. XXII).
(!)	--..--	Signal indicating that a station is about to send at high power.
PRB	Do you wish to communicate by means of the International Signal Code?	I wish to communicate by means of the International Signal Code.
QRA	What ship or coast station is that?	This is ____.
QRB	What is your distance?	My distance is ____.
QRC	What is your true bearing?	My true bearing is ____ degrees.
QRD	Where are you bound for?	I am bound for ____.
QRF	Where are you bound from?	I am bound from ____.
QRG	What line do you belong to?	I belong to the ____ Line.
QRH	What is your wave length in meters?	My wave length is ____ meters.
QRJ	How many words have you to send?	I have ____ words to send.
QRK	How do you receive me?	I am receiving well.
QRL	Are you receiving badly? Shall I sent 20 ...-. for adjustment?	I am receiving badly. Send 20 ...-. for adjustment.
QRM	Are you being interfered with?	I am being interfered with.
QRN	Are the atmospherics strong?	Atmospherics are very strong.
QRO	Shall I increase power?	Increase power.
QRP	Shall I decrease power?	Decrease power.
QRQ	Shall I send faster?	Send faster.
QRS	Shall I send slower?	Send slower.
QRT	Shall I stop sending?	Stop sending.
QRU	Have you anything for me?	I have nothing for you.
QRV	Are you ready?	I am ready. All right now.
QRW	Are you busy?	I am busy. (or, I am busy with ___). Please do not interfere.
QRX	Shall I stand by?	Stand by. I will call you when required.
QRY	When will be my turn?	Your turn will be No. ___.
QRZ	Are my signals weak?	Your signals are weak.
QSA	Are my signals strong?	Your signals are strong.
QSB	Is my tone bad? Is my spark bad?	The tone is bad. The spark is bad.
QSC	Is my spacing bad?	Your spacing is bad.
QSD	What is your time?	My time is ___.
QSF	Is transmission to be in alternate order or in series?	Transmission will be in alternate order.
QSG		Transmission will be in series of 5 messages.
QSH		Transmission will be in series of 10 messages.
QSJ	What rate should I collect for ___?	Collect ___.
QSK	Is the last radiogram canceled?	The last radiogram is canceled.
QSL	Did you get my receipt?	Please acknowledge.

QSM	What is your true course?	My true course is ___ degrees.
QSN	Are you in communication with land?	I am not in communication with land.
QSO	Are you in communication with any ship or station (or: with ___)?	I am in communication with ___ (through ___).
QSP	Shall I inform ___ that you are calling him?	Inform ___ that I am calling him.
QSQ	Is ___ calling me?	You are being called by ___.
QSR	Will you forward the radiogram?	I will forward the radiogram.
QST	Have you received the general call?	General call to all stations.
QSU	Please call me when you have finished (or: at ___ o'clock)?	Will call when I have finished.
QSV (1)	Is public correspondence being handled?	Public correspondence is being handled. Please do not interfere.
QSW	Shall I increase my spark frequency?	Increase your spark frequency.
QSX	Shall I decrease my spark frequency?	Decrease your spark frequency.
QSY	Shall I send on a wave length of ___ meters?	Let us change to the wave length of ___ meters.

(1) Public correspondence is any radio work, official or private, handled on commercial wave lengths.

When an abbreviation is followed by a mark of interrogation, it refers to the question indicated for that abbreviation.

EXAMPLES.

Station.		
A	Q R A?	What is the name of your station?
B	Q R A Campania	This is the Campania.
A	Q R G?	To what line do you belong?
B	Q R G Cunard Q R Z	I belong to the Cunard Line. Your signals are weak.

Station A then increases the power of its transmitter and sends:

A	Q R K?	How are you receiving?
B	Q R K	I am receiving well.
	Q R B 80	The distance between our stations is 80 nautical miles.
	Q R C 62	My true bearing is 62 degrees, etc.

EXTRACT FROM THE INTERNATIONAL TELEGRAPH CONVENTION, SIGNED AT ST. PETERSBURG, JULY 10-22, 1875.

[See Article 17 of the convention, p. 20.]

ARTICLE 1. The High Contracting Parties concede to all persons the right to correspond by means of the international telegraphs.

ARTICLE 2. They bind themselves to take all the necessary measures for the purpose of insuring the secrecy of the correspondence and its safe transmission.

ARTICLE 3. They declare, nevertheless, that they accept no responsibility as regards the international telegraph service.

ARTICLE 5. Telegrams are classed in three categories:

1. State telegrams: those emanating from the Head of the Nation, the Ministers, the Commanders-in-Chief of the Army and Naval forces, and the Diplomatic or Consular Agents of the Contracting Governments, as well as the answers to such telegrams.
2. Service telegrams: those which emanate from the Managements of the Telegraph Service of the Contracting States and which relate either to the international telegraph service or to subjects of public interest determined jointly by such Managements.
3. Private telegrams.

In the transmission, the State telegrams shall have precedence over other telegrams.

ARTICLE 6. State telegrams and service telegrams may be issued in secret language, in any communications.

Private telegrams may be exchanged in secret language between two States which admit of this mode of correspondence.

The States which do not admit of private telegrams in secret language upon the expedition or arrival of the same, shall allow them to pass in transit, except in the case of suspension defined in article 8.

ARTICLE 7. The High Contracting Parties reserve the right to stop the transmission of any private telegram which may appear dangerous to the safety of the State, or which may be contrary to the laws of the country, to public order or good morals.

ARTICLE 8. Each Government also reserves the right to suspend the international telegraph service for an indefinite period, if deemed necessary by it, either generally, or only over certain lines and for certain classes of correspondence, of which such Government shall immediately notify all the other Contracting Governments.

ARTICLE 11. Telegrams relating to the international telegraph service of the Contracting States shall be transmitted free of charge over the entire systems of such States.

ARTICLE 12. The High Contracting Parties shall render accounts to one another of the charges collected by each of them.

ARTICLE 17. The High Contracting Parties reserve respectively the right to enter among themselves into special arrangements of any kind with regard to points of the service which do not interest the States generally.

Part II.--REGULATIONS GOVERNING SHIP AND LAND RADIO STATIONS.

SHIP STATIONS.

Emergency apparatus.

1. On vessels coming under the ship acts, an emergency power supply, independent of the vessel's main electric power plant, must be provided which will enable radio messages to be sent for at least four hours over a distance of at least 100 miles day or night. The emergency power supply and equipment should be located and installed in such manner as to afford maximum protection against accident.

2. The radio transmitting apparatus, operated from the emergency power supply, should be capable of functioning within two minutes after unexpected notice to the operator.

3. The complete equipment must be maintained in an efficient condition at sea.

4. The complete emergency equipment should be tested before each sailing and daily at sea by the operator or an inspector and a note of its performance entered in the radio log.

5. Radio inspectors or other duly authorized officers of the Government will occasionally call for test messages, to be sent by means of the emergency apparatus, while the vessel is at sea.

6. An "induction coil" connected to "plain aerial" is not recommended as emergency apparatus, on account of the high voltages produced which frequently damage the antenna insulation and on account of "vibrator troubles."

7. A motor generator or rotary converter operated by storage battery is probably the most satisfactory means available at present of energizing the transmitting apparatus.

8. Any auxiliary engine for wireless purposes must operate on a fuel which will fulfill the requirements of Rule XI, section 5, of the General Rules and Regulations of the Steamboat-Inspection Service, reading as follows:

> None of the inflammable articles specified in section 4472, Revised Statutes, or oil that will not stand a fire test of 300° F. shall be used as stores on any pleasure steamer or steamer carrying passengers except that vessels not carrying passengers for hire may transport gasoline or any of the products of petroleum for use as a source of motive power for motor boats or launches of such vessels. (Sec. 4472, R. S.)

Spare parts and repairs.

9. Every ship station shall carry a reasonable number of spares of such parts of both the main and emergency radiotelegraph equipments as are subject to undue wear, deterioration, or liability to accident.

10. One extra pair of head telephones, extra cords, and extra detectors must always be kept on hand.

11. A storage battery voltmeter, hydrometer, a supply of electrolyte, and distilled water should be a part of the regular equipment, but are not prescribed in terms by statute. The absence of these and similar inexpensive emergency articles will be brought to the attention of the master and of the company installing the apparatus by the radio inspector, in writing, and if after a reasonable interval they have not been supplied, the inspector will communicate the fact to the Commissioner of Navigation.

Power available.

12. The vessel's electric power for the operation of the main equipment shall, at all times while the steamer is under way, be available for the radio operator's use. On steamers where the dynamo is not run continuously there should be an efficient means of communication between the radio room and the dynamo room, in order that the radio operator may signal for power, as the law provides that he may not leave his post of duty.

Communication between radio room and bridge.

13. Efficient communication between the radio room and the bridge must be maintained. A speaking tube or telephone will comply with this requirement. A bell and messenger service will not be acceptable unless there are special conditions justifying this equipment. The speaking tube or telephone must terminate in the radio room and on the bridge, or in the chart room if readily accessible from the bridge. If the radio room is adjacent to or accessible from the bridge so that orders may be transferred direct, no means of communication will be required. Any arrangement calling for the services of a third person to transmit the message will not be satisfactory. The radio inspectors will notify the ship authorities whether the means of communication provided is satisfactory at the time of inspection.

Continuous watch.

14. On vessels of the United States it is the statutory duty of the master to see that one operator is on duty at all times. The radio service of the ship is under the supreme authority of the master.

15. Masters should require operators on duty to communicate with the officer on the bridge every half hour.

16. Operators must make entries on the radio log *every 15* minutes, as evidence that a continuous watch is being maintained. The entries must, if possible, consist of the call letters of other stations communicating and a few words of the intercepted messages.

Vessels in port.

17. When vessels are in port the key to the radio room must at all times be on board in charge of the proper officer and the radio equipment shall be in such condition as to facilitate Government inspection.

CLASSIFICATION OF SHIP STATIONS AND GRADES OF OPERATORS REQUIRED.

First class.

18. First Class: Vessels having a continuous service. There shall be placed in the first-class vessels which are intended to carry 25 or more passengers--(1) If they have an average speed in service of 15 knots or more; (2) if they have average speed in service of more than 13 knots, but only subject to the twofold condition that they have on board 200 persons or more (passengers and crew), and that, in the course of their voyage, they go a distance of more than 500 sea miles between any two consecutive ports.

Second class.

19. Second Class: Vessels having a continuous *watch* but a *service* of limited duration. Other vessels placed in the second class *must*, during navigation, maintain a continuous *watch* for at least seven hours a day, and a *watch* of ten minutes at the beginning of every other hour.

Third class.

20. Third Class: Vessels which have no fixed periods of service. All vessels which are placed neither in the first nor in the second class shall be placed in the third class.

Service and operators required.

21. *Service* may be defined as preparedness to transmit and receive radio messages or signals at the rate of at least 20 words per minute.

22. *Watch* may be defined as preparedness to receive distress signals and call letters slowly. A "watcher" or cargo-grade operator or will summon a first or second class operator if necessary.

23. All American vessels required by the act of July 23, 1912, to be equipped with radio apparatus, and operators *must* at all hours maintain a continuous *watch*; that is to say, an operator or *watcher* must be "listening in" continuously. This requirement is outside of and above the requirement based on the classification under which the ship's station is licensed.

24. Vessels voluntarily equipped are not required to maintain this continuous *watch*. Vessels voluntarily equipped are, however, subject to the following requirements as to *watch* according to the class assigned to them in their station licenses.

25. If a license of the second class be issued to a voluntarily equipped vessel, the station *must* maintain a continuous *watch* for at least seven hours a day and a *watch* of ten minutes at the beginning of every hour.

26. The grade of operators required on vessels of each class are prescribed in the London Convention Service Regulations, Article X. A continuous *watch* may be maintained by one commercial second-grade operator and one cargo-grade operator on cargo steamers.

27. Passenger vessels coming under the act of July 23, 1912, which carry or are licensed to

carry 25 or more passengers, *must* be placed in the first class: "(*a*) If they have an average speed in service of 15 knots or more; (*b*) if they have an average speed in service of more than 13 knots, but only subject to the twofold condition that they have on board 200 persons or more (passengers and crew), and that in the course of their voyage they go distance of more than 500 sea miles between any two consecutive ports." The *service* shall be carried on by at least two commercial first-grade operators.

28. Cargo vessels coming under the act of July 23, 1912, which are required to maintain a continuous *watch*, *must* be placed in the second class if continuous *service* is not maintained. On cargo steamers a continuous *watch* may be maintained by at least one commercial second-grade operator and one cargo-grade operator.

29. Passenger vessels coming under the act of July 23, 1912, but which are not *required* to be entered in the first class, *may* be entered in the first or second class, according to whether continuous *service* or continuous *watch* is maintained. The number and grade of operators required is determined by *service* or *watch*. On passenger vessels coming under the ship act but entered in the second class at least two second-grade operators are required to maintain continuous watch.

30. Cargo vessels which come under the act of July 23, 1912, and are required to maintain a continuous *watch*, may be placed in the first class, if continuous *service* is maintained. (For operators, see par. 28.)

31. All vessels voluntarily equipped with radio apparatus and which have no specified hours of *service* or *watch* must be placed in the third class.

32. Any vessel voluntarily equipped may be placed in the first class if continuous *service* is maintained, or in the second class if a continuous *watch*, or a watch of limited duration, such as specified above for vessels of the second class, is maintained.

33. In all ship stations transmissions shall be made only by operators holding commercial first or second grade licenses or higher.

34. Continuous *service* shall be maintained by not lower than commercial first-grade operators.

35. Vessels which are voluntarily equipped with radio apparatus for their own convenience and for the correspondence of officers and crew must employ at least one commercial second-grade operator or higher.

36. Radio telephone apparatus on vessels not coming under the act of July 23, 1912, must be operated by a person holding a cargo-grade license or higher.

37. The owners of ship stations desiring to change the classification of a ship must apply for a new license.

LAND STATIONS.

Coast station, definition of.

38. Coast stations are stations which transmit messages to vessels at sea or on the Great Lakes, or whose operations can interfere with the exchange of messages between ship and ship or ship and coast. The principal purpose of the regulation of radio communication, international and national, is to secure the greatest efficiency of maritime communication through this agency, especially as a means of promoting safety to life.

Inland stations, definition of.

39. Inland stations are stations which can not transmit messages to vessels at sea or on the Great Lakes and whose operations can not affect the transmission of messages between ship and ship or ship and coast. This may be due to their geographical location or to their range, dependent on power and aerial, or conditions. In some instances actual inspection may be necessary to determine whether a station should be licensed as a coast station or an inland station. An operator or owner in doubt as to the classification of his station should communicate the facts to the radio inspector of his district when applying for a license.

Wave lengths, distress signals.

40. Stations are bound to give absolute priority to calls of distress from ships, to similarly answer such calls, and to take such action with regard thereto as may be required.

41. The working of stations shall be organized as far as possible in such manner as not to disturb the service of other stations.

42. All coast stations (par. 38), excepting general and restricted amateur stations, are required to be able to transmit on the wave lengths of 300 and 600 meters for the purpose of transmitting or relaying distress messages or signals and messages relating thereto, if necessary.

43. Coast stations primarily intended for long waves and long-distance transmission may

install an auxiliary antenna and auxiliary transmitter to comply with the short wave length requirements.

44. The international standard wave length is *600* meters, and the operators of all *coast stations* are required, during the hours the station is in operation, to "listen in" at intervals of not less than 15 minutes and for a period not less than 2 minutes, with the receiving apparatus tuned to receive this wave length, for the purpose of determining if any distress signals or messages are being sent and to determine if the transmitting operations of the "listening station" are causing interference with other radio communication.

General public service.

45. General public service may be defined as "paid business," conducted on commercial wave lengths between ship and shore or ship and ship.

46. Limited public service may be defined as "paid business" between certain designated land stations, ships or lines of ships, and must be conducted on some authorized wave length other than 300 or 600 meters.

47. All special service must be conducted on some authorized wave length other than 300 or 600 meters, not interfering with general public service.

48. Limited commercial, special amateur, and all stations which have no authorized rates, shall not transmit or accept public correspondence from other stations, except in case of emergency.

49. If a general public-service coast station also maintains a limited commercial service with other stations on land or with vessels at sea, the limited commercial service must be conducted on some authorized wave length other than 300 or 600 meters, but this service can be authorized on a general public-service coast station license without stating the specific hours, it being understood that the limited commercial service is conducted only when no general public service business is on file.

50. If a general public-service coast station also maintains a public service between fixed points on land, the service between the land stations must be conducted on some authorized wave length other than 300 or 600 meters, and a separate form, No. 761, should be submitted covering "Limited public service," giving the exact hours of such service.

CLASSIFICATION OF LAND STATIONS AND GRADES OF OPERATORS REQUIRED.

Classes.

51. Both coast stations (the words "coast stations," "shore stations," and "coastal stations" are used interchangeably) and inland stations are divided for the purposes of the administration of the act into the following classes: (1) Public-service stations, (*a*) general, (*b*) limited; (2) limited commercial stations; (3) experiment stations for the development of radio communication; (4) technical and training school stations; (5) special amateur stations; (6) general amateur stations; (7) restricted amateur stations.

Service and operators required.
General Public.

52. CLASS 1.--(*a*) *Public-service stations, general*, are those open to general business between coast and ships and include those operated by common carriers under the act of February 4, 1887, to regulate commerce, amended June 18, 1910. They are required to maintain a constant *service* when open. Every coastal station open to public service shall at all times be ready to receive messages of such wave lengths as are required by the international convention in force. (Sec. 4, first regulation, act of Aug. 13, 1912.) The station rates are authorized in the license and published in the Official Berne List. Whenever such stations do not insure a constant service, transmitting and receiving day and night without interruption, the Secretary of the Navy is directed to open naval radio stations within 100 miles thereof to public business. (Sec. 4, eighteenth regulation, act of Aug. 13, 1912.) The Secretary of War, is authorized by the act of May 26, 1900 (31 Stat., 206), to open Alaskan military stations to public service.

53. General public service shall be conducted only by operators holding commercial first-grade licenses or higher.

Limited public.

54. CLASS 1.--(*b*) *Public service stations, limited*, are reserved for a limited public service, determined by the object of the correspondence or other circumstances independent of the system employed. Stations of this class transmit and receive public messages to and from certain stations only, which are designated in the license. The rates are authorized in the licenses, and if not published in the official list they may be obtained from the licensee.

55. The service of limited public service *coast* stations shall be carried on by commercial first-grade operators or higher.

56. The service of limited public service *inland* stations shall be carried on by commercial

second-grade operators or higher.

Limited commercial.

57. CLASS 2.--*Limited commercial stations* are not open to public service and are licensed for a specific commercial service or services defined in the license. Stations of this class must not transmit to or accept public messages from other stations. No rates are authorized.

58. If a coast station, the operators shall hold a commercial second-grade license or higher. (Par. 57.)

Experimental.

59. CLASS 3.--*Experiment stations*.--The Secretary of Commerce is authorized by section 4 of the act to grant, special temporary licenses "to stations actually engaged in conducting experiments for the development of the science of radio communication, or the apparatus pertaining thereto, to carry on special tests, using any amount of power or any wave lengths, at such hours and under such conditions as will insure the least interference with the sending or receipt of commercial or Government radiograms, of distress signals and radiograms, or with the work of other stations." Applicants for such licenses should state any technical result they have already produced, their technical attainments, etc. The fact that an applicant desires to experiment with his equipment does not justify or require a license of this class. Most experiments can be made within the limitations of general and restricted amateur station licenses or by use of an artificial antenna to prevent radiation.

60. Experiment stations may be operated by a person holding an experiment and instruction grade license or higher.

Technical.

61. CLASS 4.--*Technical and training-school stations* will be licensed, according to the degree of technical training attained and imparted and to local conditions.

62. The grade of operators required will be specified when the license is issued.

Special amateur.

63. CLASS 5.--*Special amateur stations* may be licensed by the Secretary of Commerce to use a longer wave length and a higher power on special application. Applications for this class from amateurs with less than two years' experience in actual radio communication will not be approved. The application must state the experience and purpose of the applicant, the local conditions of radio communication, especially of maritime radio communications in the vicinity of the station, and a special license will be granted only if some substantial benefit to the art or to commerce apart from individual amusement seems probable. (Sec. 4, fifteenth regulation, act of Aug. 13, 1912.)

64. Special amateur *coast* stations must be operated by a person holding a commercial second-class license or higher. Inland stations may be operated by persons holding amateur second-grade licenses or higher.

General amateur.

65. CLASS 6.--*General amateur stations* are restricted to a transmitting wave length not exceeding 200 meters and a transformer input not exceeding 1 kilowatt. (Sec. 4, fifteenth regulation, act of Aug. 13, 1912.)

Restricted amateur.

66. CLASS 7.--*Restricted amateur stations*, within 5 nautical miles of a naval or military station, are restricted to a wave length not exceeding 200 meters and to a transformer input not exceeding one-half kilowatt. (Sec. 4, sixteenth regulation, act of Aug. 13, 1912.)

67. Amateur first or second grade operators or higher are required for general and restricted amateur stations.

68. The license does not specify the number of operators required, but provides that the station shall at all times while in operation be under the care of an operator licensed for that purpose. The grade and number of operators as required by law are determined by the service of the station.

Special stations.

69. *Special stations for exceptional distances* are land stations designed to carry on transoceanic radio communication as between the United States and European countries, or between the Pacific coast and Hawaii, or from the United States over similar long distances at sea to another land station, or (inland) to carry on radio communication overland over exceptional distances. These stations will all come under one of the classifications named above, and the license will indicate the stations for which communication is authorized and indicate the range.

REGULATIONS COMMON TO LAND AND SHIP STATIONS.

Changes.

70. Any change in the characteristics of the radio apparatus or service of the station must be authorized by the Secretary of Commerce.

Official list.

71. In order to comply with section 2 of the act of June 24, 1910, as amended July 23, 1912, every land station open to general public service, and every station on board an

American vessel of the first or second class engaged in the foreign trade or transoceanic service, shall have as a part of the station equipment a copy of the official Berne list and supplements thereto as issued. Information concerning the use of this list and method of procuring it is given on page 75, paragraph 196.

Reduction of power.

72. The service regulations of the London convention, Article VII, paragraphs 1 and 2b, require a reduction of power or range under certain conditions. A proper resistance, impedance coil, or reactance regulator in the primary circuit is recommended. In certain cases the reduction of voltage or decreasing of coupling may be approved upon recommendations of radio inspectors.

Stations out of commission.

73. Persons or corporations holding licenses for radio stations, either land or ship, should notify the radio inspector for the district whenever the station or vessel goes out of commission for a period exceeding three months. The Commissioner of Navigation should be notified promptly of any intention to suspend or discontinue the service of any commercial station.

74. If there is no intention to resume the same service, or if the station or vessel will enter a different service from that indicated by the license, the radio inspector will submit the license to the Bureau, together with a statement of the facts, so that the license may be amended.

75. When the station goes into commission, the radio inspector will satisfy himself that the station corresponds to the schedule of the station as shown in the license.

Testing.

76. Stations desiring to conduct tests should communicate with the radio inspector by letter or telephone, stating the probable length of time that will be required. Stations conducting such tests or temporary experiments should "listen in," to determine that no interference is being caused, and during the tests should "listen in" frequently for the interference signal, "Q R M." Stations conducting tests should transmit their official call signal frequently. Attention is invited to the act of August 13, 1912, section 5:

> That every license granted under the provisions of this act for the operation or use of apparatus for radio communication shall prescribe that the operator thereof shall not willfully or maliciously interfere with any other radio communication. Such interference shall be deemed a misdemeanor, and upon a conviction thereof the owner or operator, or both, shall be punishable by a fine not to exceed five hundred dollars or imprisonment for not to exceed one year, or both.

77. The Department holds that interference caused by tests of the character described above (par. 76) is "willful" when no "listening in" precautions are taken and the call signal of the station sending is not repeated at intervals.

APPLICATIONS FOR SHIP AND LAND STATION LICENSES, RENEWALS, AND DUPLICATES.

Apparatus exempt from license.

78. The act does not apply either afloat or ashore to--(*a*) Apparatus for radio communication which merely receives radiograms and is not equipped for sending; (*b*) apparatus for the transmission of radiograms exclusively between points in the same State, if the effect of such transmission does not extend beyond the State (so as to interfere with the radio communication of other States), or if the effect of such transmission does not interfere with the reception of radiograms from beyond the State (so as to interfere with the interstate radio communication of that State); (*c*) apparatus for radio communication which has been issued to the Organized Militia by the War Department or to the Naval Militia by the Navy Department and is used for official purposes only.

79. The owner or operator of any apparatus who may be in doubt whether his apparatus, under this paragraph, is exempt from license may write the facts to the radio inspector for his district before applying for a license.

Ship stations.

80. The apparatus for transmission of radiograms, or signals on any vessel of the United States not permanently moored, requires a license.

Land stations.

81. Apparatus for radio communication on land within the jurisdiction of the United States (excluding the Philippine Islands and excluding apparatus of the Government of the United States) must be licensed if--(*a*) the apparatus is a means of commercial intercourse among the several States or with foreign nations; or (*b*) the apparatus transmits radiograms or signals the effect of which at any time extends beyond the State; or (*c*) the apparatus interferes with the receipt of messages in any State from beyond such State.

Applications for licenses.

82. Station licenses for the use and operation of apparatus for radio communication under the act may be issued only to citizens of the United States or Porto Rico or to a company incorporated under the laws of some State or Territory or of the United States or Porto Rico.

83. Licenses can be issued to clubs if they are incorporated or if a member will accept the

responsibility for the operation of the apparatus, carrying with it the possibility of being penalized for infraction of the laws.

84. Applications for station licenses of all classes should be addressed to the United States Radio Inspector for the district in which the station is located, who will forward the necessary blank forms and information. The limits of the districts and addresses of, radio inspectors are given on page 70, paragraph 166.

85. Upon receipt of the forms, properly completed, the radio inspector will make a thorough inspection of the station if practicable.

86. When applications and forms have been properly submitted, the stations may be operated in accordance with the laws and regulations governing the class of station for which application for license has been made, until such time as the application can be acted upon unless the applicant is otherwise instructed and provided temporary official call letters are assigned.

87. General and restricted amateur-station license are issued directly by radio inspectors. Station licenses of all other classes are issued from the office of the Commissioner of Navigation, Department of Commerce. Applications and forms are forwarded by radio inspectors with recommendations by them.

88. Stations desiring to operate different portions of the day under different classifications shall submit application for each service, giving exact hours for each. If approved, each classification will be specified in the license.

Amateur applications.

89. The owner of an amateur station may operate his station in accordance with the laws if his application for a license has been properly filed but has not been acted upon. An application for an operator's license must also have been filed and every effort made to obtain the license before the station may be operated.

90. "Provisional" station licenses are issued to amateurs remote from the headquarters of the radio inspector of the district in which the station is located. These licenses are issued as a matter of convenience and record. If, upon inspection, the station is found to comply with the law, the inspector will strike out the word "Provisional" and insert the date of inspection and his signature at the bottom of the license.

91. If such a station is found not to comply with the law the provisional license may be canceled until such time as the apparatus is readjusted to meet the requirements of the law: *Provided, however*, That consideration will be given to any reports of interference filed against such a station.

Renewals of station licenses.

92. All persons are warned that it is unlawful to operate stations after licenses have expired unless application for renewal has been properly made.

93. Hereafter expired station licenses of all classes, commercial and amateur, need not be returned to the radio inspectors with applications for renewals. Owners desiring a renewal license must complete new forms, as prescribed for original applications. New licenses will be issued in every case of renewal.

Duplicates of station licenses.

94. Any person applying for a duplicate license to replace an original which has been lost, mutilated or destroyed will be required to submit an affidavit to the Bureau of Navigation through the radio inspector of the district, attesting the facts regarding the manner in which the original was lost. The Commissioner of Navigation will consider the facts in the case and advise the radio inspector in regard to the issue of a duplicate license, or a duplicate will be forwarded through the inspector's office.

95. A duplicate license will be issued under the same serial number as the original and will be marked "Duplicate" in red across the face.

Part III.--REGULATIONS GOVERNING RADIO OPERATORS.

GRADES AND REQUIREMENTS.

Grades.

96. (1) Commercial extra first grade; (2) commercial first grade; (3) commercial second grade; (4) commercial cargo grade; (5) commercial temporary permit; (6) experiment and instruction grade; (7) amateur first grade; (8) amateur second grade.

General requirements.

97. The Service Regulations of the International Convention require that "the service of the station on shipboard shall be carried on by a telegraph operator holding a certificate issued by the Government to which the vessel is subject."

98. Such certificate shall attest the professional efficiency of the operator as

regards--(*a*) Adjustment of the apparatus and knowledge of its functioning; (*b*) transmission and acoustic reception at the rate of not less than 20 words a minute (Continental Morse) for commercial first-grade operators and not less than 12 words per minute for second-grade operators; (*c*) knowledge of the regulations governing the exchange of wireless telegraph correspondence; (*d*) the certificate shall furthermore state that the Government has bound the operator to secrecy with regard to the correspondence.

99. The International Convention has been ratified by the principal maritime nations, dominions, and provinces. Radio operators holding valid certificates issued by foreign Governments which are parties to the convention will be recognized by this Department as persons "skilled in the use of such apparatus" within the meaning of the act, unless in the case of a specific individual there may be special reason to doubt the operator's skill and reliability. Such certificates should be ready at hand for the inspection of radio inspectors or customs officers before the steamer departs from the United States.

100. In the case of a vessel subject to the act under the flag of any nation not a party to the International Convention, the radio operator, before the departure of the vessel from the United States, must furnish to the inspector evidence that he is "skilled in the use of the apparatus." This evidence shall consist of an examination on board by the radio inspector.

Requirements for each grade.
Commercial extra.

101. *Commercial extra first grade.*--The Department of Commerce will issue a special license, to be known as commercial extra first grade, to radio operators whose trustworthiness and efficient service entitle them to confidence and recognition.

102. These licenses will be given consideration by the Civil Service Commission in examinations for positions requiring knowledge of radio telegraphy, when experience is rated as a part of such examinations.

103. Applicants for the commercial extra first-grade license must pass a special examination. To be eligible for this examination they must hold commercial first-grade licenses, and their certificates of skill in radio communication, issued under the act of June 24, 1910, or licenses under the act of August 13, 1912, must record 18 months' satisfactory commercial service at sea or at land stations, either or both, during the two years previous to the filing of the application for examination, as shown by indorsement on the license service records, or other satisfactory evidence, and provided that the applicants have not been penalized for a violation of the radio laws and regulations.

104. A speed of at least 30 words per minute, Continental Morse, and 25 words per minute, American Morse (five letters to the word), must be attained. The technical questions and the questions on the radio laws and regulations will be considerably wider in scope than those for commercial first grade, and a higher percentage will be required.

105. All examination papers, including the code test sheets, will be marked and forwarded to the Commissioner of Navigation, with a recommendation by the radio inspector or examining officer. Examination papers will be marked upon the basis of 100, and licenses will be recommended only if 80 or better is attained.

106. Licenses of this grade will be issued by the Commissioner of Navigation, indorsed by the Secretary of Commerce, and delivered to the successful applicant through the examining officer.

Commercial first.

107. *Commercial first grade.*--The applicant must pass a satisfactory examination in--(*a*) The adjustment, operation, and care of the apparatus, including correction of faults and change from one wave length to another; (*b*) transmitting and receiving by ear at a speed of not less than 20 words a minute in Continental Morse (five letters to the word); (*c*) use and care of storage battery or other auxiliary power apparatus; (*d*) knowledge of the international regulations in force applying to radio communication; (*e*) knowledge of the requirements of the acts of Congress to regulate radio communication (secs. 3, 4, 5, 6, and 7 of the act of Aug. 13, 1912).

108. The commercial extra first grade and the commercial first-grade licenses qualify holders for employment at any ship or land station of any class.

Commercial second.

109. *Commercial second grade.*--The applicant must pass a satisfactory examination in all the subjects prescribed above for the first grade, with the exception that the minimum speed in transmitting and receiving shall not be less than 12 words a minute in Continental Morse, and the examination in the subjects will not be as comprehensive as that given first-grade operators.

Cargo.

110. *Commercial cargo grade.*--Section 2 of the act of July 23, 1912, provides: "On cargo steamers, in lieu of the second operator provided for in this act, there may be substituted a

member of the crew or other person who shall be duly certified and entered in the ship's log as competent to receive and understand distress calls or other usual calls indicating danger, and to aid in maintaining a constant wireless watch so far as required for the safety of life."

111. The examination will be conducted so as to determine the following facts: (*a*) That the applicant is sufficiently familiar with the Continental Morse Code to recognize the distress signal (SOS), when included in a list of other words or signals sent slowly (approximately five words a minute); (*b*) that the applicant is sufficiently familiar with the Continental Morse Code to recognize radio call letters of the vessel on which he desires to operate when sent slowly and repeated several times; (*c*) that the applicant is sufficiently familiar with the type of the receiving apparatus of the vessel on which he desires to operate to determine by a buzzer or similar test that the detector or receiving apparatus is properly adjusted to receive signals.

112. Examining officers and radio inspectors are authorized to issue a certificate, in the form of an amateur first-grade license, after examination, to indicate the facts above enumerated in the case of a member of the crew or other person, and experience under this form will be credited by examining officers if the holder later applies for examination for a commercial license. These licenses will be marked "Cargo" in the upper right-hand corner under the serial number.

Temporary permit.

113. *Commercial temporary permit.*--Section 3 of the act of August 13, 1912, provides: "In case of emergency the Secretary of Commerce may authorize a collector of customs to issue a temporary permit, in lieu of a license, to the operator on a vessel subject to the radio ship act of June 24, 1910."

114. The temporary permit, in the form of a letter to the operator, is to be issued only in cases of emergency and will be valid for one voyage from ----- to -----, beginning -----, unless the proper license or properly licensed operator can be obtained en route.

115. The permits should be issued only to persons who the collector of customs has reason to believe are skilled in the use of the apparatus, but have not had the opportunity to present themselves for examination before Government officers authorized to conduct examinations and furnish licenses.

116. The collector of customs will forward to the Department of Commerce (Bureau of Navigation) a report covering each temporary permit issued and the reasons for its issue.

Experiment and instruction.

117. *Experiment and instruction grade.*--Experimenters and instructors of scientific attainments in the art of radio communication whose knowledge of the radio laws satisfies the radio inspector or the examining officer may obtain this grade license, provided they are able to transmit and receive in the Continental Morse Code at a speed sufficient to enable them to recognize distress calls or the "keep-out" signals.

118. The operator's license for this grade is a commercial license, indorsed by the Secretary of Commerce with a statement of the special purpose for which it is valid.

119. If the applicant qualifies, the radio inspector or examining officer will forward a blank commercial license, with the papers, to the Commissioner of Navigation, with his recommendation. If approved, the license will be properly indorsed by the Secretary of Commerce and delivered to the licensee through the recommending officer.

120. This license has no reference to the instruction of radio operators as such, but is required by those operating apparatus licensed as experimental stations but who are unable to obtain commercial grade operators' licenses.

121. Amateurs before applying for licenses should read and understand the essential parts of the International Radiotelegraphic Convention in force and sections 3, 4, 5, and 7 of the act of August 13, 1912. The Department recognizes that radio communication offers a wholesome form of instructive recreation for amateurs. At the same time its use for this purpose must observe strictly the rights of others to the uninterrupted use of apparatus for important public and commercial purposes. The Department will not knowingly issue a license to an amateur who does not recognize and will not obey this principle. To this end the intelligent reading of the International Convention and the act of Congress is prescribed as the first step to be taken by amateurs. A copy of the radio laws and regulations may be procured for this purpose from the radio inspectors or from the Commissioner of Navigation, Department of Commerce, Washington, D. C., but they are not for public distribution. Additional copies may be purchased from the Superintendent of Documents, Government Printing Office, Washington, D. C., at a nominal price.

Amateur first.

122. *Amateur first grade.*--The applicant must have a sufficient knowledge of the

adjustment and operation of the apparatus which he wishes to operate and of the regulations of the International Convention and acts of Congress in so far as they relate to interference with other radio communication and impose certain duties on all grades of operators. The applicant must be able to transmit and receive in Continental Morse at a speed sufficient to enable him to recognize distress calls or the official "keep-out" signals. A speed of at least 10 words per minute (five letters to the word) must be attained.

Amateur second.

123. *Amateur second grade.*--The requirements for the second grade will be the same as for the first grade. The second-grade license will be issued only where an applicant can not be personally examined or until he can be examined. An examining officer or radio inspector is authorized in his discretion to waive an actual examination of an applicant for an amateur license, if the amateur for adequate reasons can not present himself for examination but in writing can satisfy the examining officer or radio inspector that he is qualified to hold a license and will conform to its obligations.

EXAMINATIONS.

Method.

124. The following requirements and method of conducting examination for radio operators' licenses will be adopted at all examining offices.

Code test (five letters to the word).

125. The test shall consist of messages with call letters and regular preambles, conventional signals and abbreviations and odd phrases, and shall in no case consist of simple, connected reading matter. The test will be conducted by means of the omnigraph or other automatic instrument wherever possible.

126. The code test shall continue for 5 minutes at a speed of 20 words, 12 words, and 10 words a minute, respectively, for the commercial first, second, and lower grades, 5 letters, numerals, or other characters to the word, and to qualify the applicant must receive 20, 12, or 10 words in consecutive order accurately and legibly written. Operators will not be permitted to break or interrupt while receiving or to correct or alter the transcription after it has been submitted to the examining officer.

127. The code test sheets written by the applicant will be forwarded to the Commissioner of Navigation with other papers and the speed attained noted in the lower left-hand corner of the first sheet.

128. An applicant will be given credit for the maximum speed he can attain.

Written examination.

129. The practical and theoretical examination shall consist of seven comprehensive questions under the following headings and values:

	Points, maximum value.
(*a*) Experience	20
(*b*) Diagram of receiving and transmitting apparatus	10
(*c*) Knowledge of transmitting apparatus	20
(*d*) Knowledge of receiving apparatus	20
(*e*) Knowledge of operation and care of storage batteries	10
(*f*) Knowledge of motors and generators	10
(*g*) Knowledge of international regulations governing radio communication and the United States radio laws and regulations	10
	100

Passing mark.

130. Seventy-five constitutes a passing mark for the first grade commercial. Sixty-five constitutes a passing mark for the second grade commercial.

131. Applicants who fail to attain 20 words in the code test but who attain a mark of between 65 and 75 in the written examination may be issued second-grade licenses, if they can receive at least 12 words per minute.

Experience.

132. Question (a) shall determine the applicant's practical knowledge and experience in handling radio apparatus. An applicant's experience will be determined largely from the personal question sheet and from satisfactory letters or references submitted. Experience, operating first-class amateur apparatus, or the apparatus provided in good training schools, will be given a reasonable value, but applicants who have had experience as apprentices at commercial shore stations or on board vessels will receive higher marks.

Reexamination.

133. No applicant who fails to qualify will be reexamined at any examining office within three months from date of the previous examination. All examination papers, whether the

applicant qualifies or not, will be forwarded to the Bureau of Navigation for filing as "Operator's record." When the records of the Bureau develop the fact that an applicant has failed to qualify and has applied for reexamination or been reexamined at the same or another office within three months, his existing license may be suspended or revoked by the Secretary of Commerce. Applicants to whom are issued second-grade licenses will not be examined for first grade within three months under the same rule.

PLACES WHERE EXAMINATIONS ARE HELD.

Regular examinations.

135. Naval radio stations: San Juan, P. R.; Colon, Canal Zone; Honolulu, Hawaii.

136. United States Army stations: Fort St. Michael, Alaska; Fort Valdez, Alaska.

137. Bureau of Navigation, Department of Commerce, Washington, D. C.

138. Radio inspectors, at their offices and elsewhere, by special arrangement.

139. Additional opportunities for taking the examination will be afforded as may be deemed necessary, and these special dates and places may be ascertained by communication with the Commissioner of Navigation, or nearest radio inspector.

140. All licenses, when awarded, will be delivered through the officer who conducted the examination.

Examinations for extra first-grade licenses.

141. Examinations for the commercial extra first-grade licenses will be held at the following offices only by appointment.

143. United States radio inspectors, customhouses: Boston, Mass.; New York, N. Y.; Baltimore, Md.; New Orleans, La.; San Francisco, Calif.; Seattle, Wash.; Detroit, Mich.; Chicago, Ill.

144. Commissioner of Navigation, Department of Commerce, Washington, D. C.

145. In special cases, upon application to the Commissioner of Navigation, arrangements may be made for examinations at other points.

APPLICATIONS FOR EXAMINATIONS FOR RADIO OPERATORS' LICENSES, RENEWALS, AND DUPLICATES.

Applications.

146. An operator's license may be granted to any person without regard to sex, nationality, or age if the applicant can fulfill the requirements for the class of license desired.

147. Applicants for licenses should communicate in writing with the commandants, commanding officers, or officers in charge, at navy yards and Army posts, with the Commissioner of Navigation, or radio inspectors, in order to fix the date when they can be examined. (See pars. 134-145.)

Special examinations.

148. Commercial licenses can only be obtained by personal examination. Where applicants are at remote points or can not proceed to examining offices, efforts will be made to examine them through radio inspectors when they are in that vicinity, but special trips can not be made for that purpose.

Amateur applications.

149. Amateurs should write to the nearest examining officer in their vicinity (see pars. 134-145) for Form 756 "Application for operator's license," and to the radio inspector in their vicinity for Form 762 "Amateur applicant's description of apparatus."

Foreign-born applicants for station licenses must submit satisfactory evidence of their citizenship.

150. Amateur operators at points remote from examining officers and radio inspectors may be issued second-grade amateur licenses without personal examination. Examinations for first-grade licenses will be given by the radio inspector when he is in that vicinity, but special trips can not be made for this purpose. (See par. 123.)

151. Persons holding radio operators' licenses, amateur second grade, should make every effort to appear at one of the examination points to take the examination for amateur first-grade license or higher.

Renewals.

152. Persons holding radio operators' licenses of any grade should, before their licenses expire, apply to the nearest radio inspector or examining officer for renewal and submit Form 756 in duplicate.

Holders of commercial extra first-grade radio operators' licenses may be issued renewal of such licenses without examination, provided the service records on the backs of the licenses properly certify to 12 months' satisfactory service in a land or ship station open to general public service, at least 6 months of which must have been served during the last 12 months of

the license period.

However, holders of commercial extra first-grade licenses now employed as radio inspectors, radio instructors, or similar occupations requiring exceptional qualifications where the duties require the testing, or demonstrating, or otherwise using commercial radio apparatus and the telegraph codes, may be issued renewals of their licenses without reexamination, provided, in addition to the above, they can show satisfactory evidence of such service covering a period of 18 months out of the two year license period. Where the applicant has not used regularly the telegraph codes, he will be given the code examination required in the original examination or, if he has used only one code, he will be examined in the code not used.

The service record shown on the licenses must be transcribed on Form 756.

The license may be marked "Expired" in red across the face and returned to the operator, if desired. The action taken should be noted on Form 756.

Where the record on the reverse side of the license does not show the service performed, the evidence submitted as proof of such service must be transmitted to the Bureau with Form 756.

Transcriptions of code tests must be submitted to the Bureau.

153. (*a*) Renewal licenses may be issued to commercial grade operators without examination, provided the service records on the backs of licenses properly certify to three months' satisfactory commercial service during the last six months of the license term. If expired licenses have been lost or destroyed, an affidavit must be submitted attesting the facts regarding the manner in which the license was lost. In such cases evidence of the required satisfactory commercial service may be submitted in the form of letters signed by masters and employers.

(*b*) Operators holding licenses of grades other than commercial, who submit satisfactory evidence to the examining officer, showing actual operation of radio apparatus for three months during the last six months of the license term, may be issued new licenses without examination. Otherwise, applicants for renewals will be examined in the usual manner.

(*c*) Renewals or new licenses may be issued a reasonable length of time previous to the expiration of existing licenses, but must bear the exact date of issue, which must correspond with the date on the back of Form 756 forwarded to the Commissioner of Navigation.

(*d*) Operators who fail to apply for renewal of their licenses on or prior to the date of expiration must be reexamined. If, because of circumstances over which the applicant has no control, an operator is unable to apply for renewal of license on or prior to the date of expiration, an affidavit may be submitted to the Commissioner of Navigation through the radio inspector or examining officer, attesting to the facts, which will be considered by the Commissioner of Navigation, who will advise the radio inspector or examining officer in regard to the issue of a renewal of the license without reexamination.

(*e*) Service records must be completed and signed only by masters, employers, or the duly authorized agents of either.

(*f*) Any improper alteration of the service record or the forgery of masters' or employers' signatures constitutes a violation of the regulations, and the operator may suffer suspension of license for a period not exceeding one year, at the discretion of the Secretary of Commerce.

154. Whether or not a new license is issued, the radio inspector or examining officer will forward one copy of Form 756, properly completed, to the Commissioner of Navigation, Department of Commerce. If a new license is not issued, the reason therefor will be stated on the back of the form.

Duplicate licenses.

155. Any operator applying for a duplicate license to replace an original which has been lost, mutilated, or destroyed will be required to submit an affidavit to the Bureau of Navigation through the radio inspector or examining officer who issued the original, attesting the facts regarding the manner in which the original was lost. The Commissioner of Navigation will consider the facts in the case and advise the radio inspector in regard to the issue of a duplicate license. A duplicate license will be issued under the same serial number as the original and will be marked "Duplicate" in red across the face.

Oath of secrecy.

156. Operators' licenses are not valid until the oath for the preservation of the secrecy of messages is properly executed before a notary public or other officer duly authorized to administer oaths. Licenses must indicate on their faces that the oath has been taken and the officer administering the oath on the back of the license should sign also in the blank provided on the face.

Licenses will not be signed by examining officers until the oath of secrecy has been

properly executed.

Posting of licenses.

157. Operators' licenses should be framed and posted in the radio room, and licenses for stations should be accessible at all times to inspectors.

Apprentices.

158. Under the supervision of a licensed operator an apprentice or unlicensed person may learn the art by the actual use of the apparatus, but the licensed operator who fails to enforce obedience to the regulations by the apprentice or unlicensed person serving under his supervision is liable to penalties as if he had himself violated the regulations.

Operators' records.

159. An individual record is kept in the Bureau of Navigation, Department of Commerce, at Washington, of each licensed operator. Each operator's examination papers and all reports in regard to interference or violations of the radio laws and regulations are filed for reference.

Surrender of licenses.

160. Radio operators holding licenses of any grade or class and applying for examination for any other grade or class must submit to the examining officer Form 756, in duplicate. Licenses held by them must be submitted to the examining officer.

161. Radio operators who pass the examination for a higher-grade license are required to submit their existing licenses to examining officers to be marked "Canceled."

162. Expired or canceled licenses will be returned to the licensees, marked "Canceled" or "Expired" in red across their faces, provided the particulars on Form 756, submitted herewith, are found correct by the examining officer. The service record shown on the reverse side of the license must be transcribed on Form 756.

Part IV--GENERAL INFORMATION.

ADMINISTRATION AND ADMINISTRATIVE DISTRICTS.

Radio districts.

163. The Department has established, for the purpose of enforcing, through radio inspectors and others, the acts relating to radio communication and the International Convention, the following districts, with the principal office for each district at the customhouse of the port named.

Addresses.

164. Communications for radio inspectors should be addressed as follows, and not to individuals: Radio Inspector, Customhouse, _____(city), _____(State).

165. Communications for the Bureau of Navigation should be addressed as follows, and not to individuals: Commissioner of Navigation, Department of Commerce, Washington, D. C.

166.

1. Boston, Mass.: Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut.
2. New York, N. Y.: New York (county of New York, Staten Island, Long Island, and counties on the Hudson River to and including Schenectady, Albany, and Rensselaer) and New Jersey (counties of Bergen, Passaic, Essex, Union, Middlesex, Monmouth, Hudson, and Ocean).
3. Baltimore, Md.: New Jersey (all counties not included in second district), Pennsylvania (counties of Philadelphia, Delaware, all counties south of the Blue Mountains, and Franklin County), Delaware, Maryland, Virginia, District of Columbia.
4. Savannah, Ga.: North Carolina, South Carolina, Georgia, Florida, Porto Rico.
5. New Orleans, La.: Alabama, Mississippi, Louisiana, Texas, Tennessee, Arkansas, Oklahoma, New Mexico.
6. San Francisco, Calif.: California, Hawaii, Nevada, Utah, Arizona.
7. Seattle, Wash.: Oregon, Washington, Alaska, Idaho, Montana, Wyoming.
8. Detroit, Mich.: New York (all counties not included in second district), Pennsylvania (all counties not included in third district), West Virginia, Ohio, Michigan (Lower Peninsula).
9. Chicago, Ill.: Indiana, Illinois, Wisconsin, Michigan (Upper Peninsula), Minnesota, Kentucky, Missouri, Kansas, Colorado, Iowa, Nebraska, South Dakota, North Dakota.

REPORTING OF VIOLATIONS.

Inspectors' authority.

167. The regulations established by law, or by the authority of law, or of the International Convention, will be enforced by the Secretary of Commerce through collectors of customs,

radio inspectors, and other officers of the Government.

Foreign vessels.

168. The service regulations of the radiotelegraphic convention in force provide that "no station on shipboard shall be established or worked by private enterprise without authority from the Government to which the vessel is subject." Such authority shall be in the nature of a license issued by said Government. Stations on foreign ships will be licensed by their Governments, respectively. Inspectors will report to the Commissioner of Navigation stations on foreign ships not so licensed.

Inspectors acting outside their districts.

169. A radio inspector is authorized in exceptional cases to act outside of his district for the convenience of commerce. In such cases he will communicate before or after acting with the inspector in whose district he has acted. Radio inspectors are authorized to communicate directly with collectors of customs and to cooperate with them in the enforcement of the law.

Violations reported.

170. Violations of the laws and regulations will be reported to the chief customs officer of the district in which the offense occurs, who will report the case to the Secretary of Commerce (Bureau of Navigation), according to the procedure followed in violations of the navigation laws. Misdemeanors will be reported to the United States district attorney in the usual manner.

171. Collectors of customs and radio inspectors are enjoined that the reports required by paragraph 170 must be precise statements of the facts as the basis for possible proceedings by the United States attorney.

172. Violations by the master of a vessel of the United States of the provisions of the second paragraph of section 1 of the ship act will be reported to the collector of customs directly, and the usual procedure in cases of fines and penalties will be followed.

INSPECTION OF SHIP STATIONS.

Inspection before clearing.

173. The radio inspectors and customs officers, as far as practicable, shall visit steamers subject to the act before they leave port and ascertain if they are equipped with the apparatus in charge of the operators prescribed by law and regulation.

Foreign vessels.

174. When the radio apparatus is certified as complying with the requirements of law by the competent authorities of a foreign Government, such certificate will be recognized by this department, but the radio inspector or customs officer may, if he deem it necessary or desirable, satisfy himself that the apparatus is in good working order.

Inspector's certificate.

175. Whenever practicable, the radio inspector shall satisfy himself on his visit before the departure of a steamer subject to the act of June 24, 1910, as amended July 23, 1912, that the radio apparatus is efficient and in good working order within the meaning of the act. If the apparatus does not comply with the law, the radio inspector will furnish the master with the stub of Form 771 "Inspection record" on which will be noted the particulars in which the apparatus does not comply with the law. Where apparatus is found to be in compliance with the law, the stub of Form 771 will not be detached.

176. Masters of vessels entering a port of the United States and expecting to leave under the act of June 24, 1910, as amended July 23, 1912, should file Form 753a "Radio declaration" (Appendix A) in duplicate with the customs officer at the time of entry. The customs officer will furnish one copy to the radio inspector in order that proper inspection of the radio equipment may be made before departure.

Master's certificate.

177. For each departure of a steamer under the act of June 24, 1910, as amended July 23, 1912, the master is required to furnish to the customs officer a certificate in the form of Appendix B (Form 753b) "Master's certificate of radio apparatus." Such certificates shall be retained in the files of the collectors of customs. The collector of customs will arrange for the collection of these certificates at all times.

Vessels about to clear in violation.

178. Where a steamer subject to the radio law is without the apparatus and the operators prescribed, or either of them, and is about to attempt to leave port, the radio inspector or customs officer visiting the vessel shall--(*a*) Furnish the master with a memorandum (stub of Form 771) of the particulars in respect of which the law has not been complied with and the penalty; (*b*) if convenient, notify the vessel's agents or the proper person in charge of the apparatus so that the necessary corrections may be made before sailing.

Vessels clearing in violation.

179. If a steamer clears in violation of the law, the radio inspector or customs officer shall submit to the collector of customs of the port a written report, stating the exact nature of the violation, the section of the law violated, and the penalties involved and all of the circumstances in connection therewith which will be of service to the collector and to the

Secretary of Commerce in determining what action shall be taken. A copy of the report will be forwarded to the Commissioner of Navigation.

180. Statements should be obtained from operators, ships' officers, or other witnesses at the time the violation is discovered and should accompany the report to the collector of customs.

181. The collector of customs will report the case to the Secretary of Commerce in the usual manner as a navigation fine case.

Government vessels.

182. Merchant vessels chartered by the United States Government are subject to the act of August 13, 1912, in every case, if the radio apparatus is owned and operated by a commercial company.

183. Merchant vessels chartered by the United States Government for the transportation of persons or supplies are subject to the requirements of the ship act (act of July 23, 1912), if the vessel is controlled and operated by the owners. Vessels commanded wholly or in part by Government officers are not subject to the ship act.

184. Government vessels or vessels chartered by the Government are subject to the act of August 13, 1912, if the radio equipment is owned and operated by private interests.

Clearance.

185. The ship act does not authorize the refusal of clearance in case of violation of its provisions, but specifically provides for the imposition of a fine in a sum not more than $5,000.

Entry.

186. The act does not apply to a vessel at the time of entering a port of the United States. Radio inspectors and customs officers may, however, accept as evidence of the efficiency of the apparatus and the skill of an operator messages shown to have been transmitted and received by him over a distance of at least 100 miles, by day, during the voyage to the United States.

OPERATORS ON FOREIGN VESSELS.

Inspection of operators.

187. In so far as licensed operators are concerned a sharp distinction should be drawn between the act of July 23, 1912, which requires apparatus and operators for radio communication on steamers, and the act of August 13, 1912, to regulate radio communication.

188. The act of July 23, 1912, amending the act of June 24, 1910, is designed to promote safety at sea through the employment of apparatus and operators to transmit and receive distress calls and other calls relating to perils and aids to navigation. It provides that in the case of American and foreign vessels subject to its provisions "the radio equipment must be in charge of two or more persons skilled in the use of such apparatus." This act does not require that the operators shall be licensed, and the penalty prescribed in section 3 of the act is not incurred by the master of a vessel whose operators are "skilled in the use of such apparatus," even though they may not be licensed.

189. The act of August 13, 1912, is designed to execute in behalf of the United States the International Radiotelegraphic Convention and thus to promote orderly exchanges by radio communication. For this purpose the International Radiotelegraphic Convention (Service Regulations) provides that the service of the station on shipboard shall be carried on by a telegraph operator holding a certificate issued by the Government to which the vessel is subject.

190. Section 3 of the act of August 13, 1912, carries out this provision of the International Convention by providing licenses for operators on American vessels. If an unlicensed person serves in charge or in supervision of the use and operation of the apparatus both he and his employer are liable to a fine of not more than $100 or imprisonment for not more than two months or both. This section and penalty do not apply to operators on foreign ships. But operators on the ships of foreign nations signatory to the International Radiotelegraphic Convention, as shown above, are required to have certificates or licenses from their own governments, and if not so certificated, the obligations of the convention have not been observed. The convention in the Service Regulations provides for this situation.

191. The act of July 23, 1912, as stated, requires that on American and foreign ships the operators must be "skilled in the use of such apparatus," but does not require that they must be licensed. To facilitate commerce and simplify administration, operators presenting American licenses or foreign certificates are accepted as "skilled in the use of such apparatus," except where there may be special reasons to doubt the operator's skill or reliability. Where operators on American or foreign ships do not have such licenses or foreign

certificates, radio inspectors or customs officers under the act of July 23, 1912, may accept other competent evidence of skill or may examine such operators.

OFFICIAL INTERNATIONAL LIST OF COAST AND SHIP RADIO STATIONS OF THE WORLD AND STATION RATES.

Radio stations of the United States.

192. The list of land and ship stations of the United States, including amateurs, giving call letters, wave lengths, nature of service, etc., can be procured from the Superintendent of Documents, Government Printing Office, Washington, D. C., at a nominal price.

Supplements.

193. Supplements to this list are issued monthly under the title "Radio Service Bulletin," and the list is revised annually as of July 1. These monthly supplements contain information concerning Government, commercial, and special stations only, and information regarding amateur stations appears only in the annual edition of the list of Radio Stations of the United States. Amendments to or changes in the Radio Laws and Regulations of the United States are printed in this bulletin in such a manner that they may be clipped and pasted in their proper places in that publication. Items of general interest concerning the enforcement of the radio laws are printed in the bulletin from time to time, as occasion warrants.

Call letters.

194. The introduction to the list of "Radio Stations of the United States" contains information concerning the assignment of international and amateur call letters.

Official list.

195. A copy of the official Berne list and supplements as issued are required as a part of the equipment of every land station open to general public service and every ship station of the first or second class on American vessels engaged in foreign trade or the transoceanic service.

International list.

196. The International List of Radio Stations of the World (edition in English) can be procured from the International Bureau of the Telegraphic Union (Radiotelegraphic Service), Berne, Switzerland.

197. In addition to the information contained in the pamphlet of the United States stations, published by the Bureau of Navigation, the international list shows geographical locations, normal ranges in nautical miles, radio systems, and rates.

Rates.

198. The international list includes the Government and commercial land and ship stations of the United States. The list is divided into three parts. The first part contains a list of ship stations, grouped by countries and arranged alphabetically; the second part contains a list of land stations arranged in the same manner; and the third part contains tables of land line and cable charges from coast radio stations to inland and various other points. In computing the total word rate applicable to a radiogram from a ship station to an inland point or vice versa, the three rates must be added. The rates in the international list are stated in francs. For approximate purposes 1 franc equals 20 cents and 5 centimes equals 1 cent. Supplements to the international list will be issued monthly, and will contain new stations and tables of alterations.

International call-letter list.

199. The International Alphabetical List of Call Letters (stations of the world) is also issued by the international bureau at Berne, and supplements will be issued monthly.

200. Neither the international list proper nor the supplements will contain a list of amateur stations.

Subscriptions to the international list.

201. Inquiries as to the subscription price of these lists should be made direct to the Berne bureau, at the address given above. (See par 196.) Remittances to Berne should be made by international postal money order.

MISCELLANEOUS INFORMATION.

Receiving stations.

202. Stations equipped to receive only do not require licenses.

203. Operators of receiving stations do not require licenses, but *all persons* are required to maintain secrecy in regard to messages, as provided in the act of August 13, 1912, nineteenth regulation of section 4.

Distances.

204. Distances under the radio laws are computed in nautical miles.

Fees.

205. No fees are charged for any operator or station license.

Licenses.

206. Licensed stations must be operated by or under the direct supervision of properly licensed operators.

207. Amateur stations within 5 miles of naval or military stations need not have been in actual operation on or before August 13, 1912, to obtain a license for a restricted amateur

station.

Censorship of messages.

208. The master of a vessel shall have the right to censor all messages addressed to or transmitted by a radio telegraph station on board his vessel, but such master shall not divulge to any person (other than the properly authorized officials of the Government, or a competent legal tribunal) or make any use whatever of any message coming to his knowledge through the exercise of such censorship, nor shall the master or any operator divulge to any person (other than the properly authorized officials of the Government, or a competent legal tribunal) or make any use whatever of any message (other than a message of distress) coming to his knowledge and not intended for the said station.

Superfluous signals.

209. The transmission of superfluous signals by any ship or coast station is absolutely prohibited; trials and practices are forbidden except under such circumstances as to preclude the possibility of interference with other stations.

Profane language.

210. No person shall transmit or make a signal containing profane or obscene words or language.

Additions or amendments.

211. Additional or amendatory regulations will be issued from time to time as they may appear necessary.

212. Masters should require radio operators to report for duty at least one hour prior to the sailing time of the vessel; to test the transmitter on ship's power and auxiliary power, test the receiver and communication between the radio room and the bridge and report to him the condition of the equipment, in order that defects may be remedied before sailing.

APPENDIX.

APPENDIX A.–*Radio Service Form 752.*

CERTIFICATE OF RADIO INSPECTION.

PORT OF _______ _______,

_______ _______, 191__.

This is to certify that I have to-day examined the apparatus for radio communication on the S. S. ______, of which ______ ______ is the master, about to leave this port for ______, and I have found the same efficient and in good working order, as prescribed by the act of June 24, 1910, as amended by the act of July 23, 1912.

(Signed) ______ ______,
Radio Inspector.
(Or) ______ ______,
Customs Inspector.

APPENDIX B.–*Radio Service Form 753.*

MASTER'S CERTIFICATE OF RADIO APPARATUS.

NOTICE.

The radio equipment must be in charge of two or more persons skilled in the use of such apparatus, one or the other of whom shall be on duty at all times while the vessel is being navigated. Such equipment, operators, the regulation of their watches, and the transmission and receipt of messages, except as may be required by law or international agreement, shall be under the control of the master, in the case of a vessel of the United States; and every willful failure on the part of the master to enforce at sea the provisions of this paragraph as to equipment, operators, and watches shall subject him to a penalty of one hundred dollars. (Act of July 23, 1912)

PORT OF _______ _______,

_______ _______, 191__.

This is to certify that I have to-day examined the apparatus for radio communication on the S. S. ______, of which I am the master, about to leave this port for ______, and I have found the same efficient and in good working order, as prescribed by the act of June 24, 1910, as amended by the act of July 23, 1912.

(Signed) ______ ______, *Master.*

No. ______

LICENSE FOR GENERAL PUBLIC SERVICE COAST RADIO STATION.

DEPARTMENT OF COMMERCE.
BUREAU OF NAVIGATION.
RADIO SERVICE.

Pursuant to the act to regulate radio communication, approved August 13, 1912, ____________________, a citizen of the State of ____________________, ______________________________________ a company incorporated under the laws of the State of ________________, having applied therefor, is hereby granted by the Secretary of Commerce for a period of ________ on and subject to the restrictions and conditions hereinafter stated and revocable for cause by him, this License to use or operate the apparatus for radio communication (identified in the schedule hereinafter) located in the State of ____________, city or town of ___________, for the purpose of transmitting to and receiving from ship stations and other land stations general public correspondence, Government and service correspondence, and distress signals and messages, at rates of compensation not in excess of those fixed by the international agreement to which the Government of the United States has adhered, which have been submitted to and approved by the Secretary of Commerce, as included in the schedule hereinafter.

2. The use or operation of apparatus for radio communication pursuant to this License shall be subject also to the articles and regulations established by the International Radiotelegraphic Convention, ratified by the Senate of the United States and caused to be made public by the President "to the end that the same and every article and clause thereof may be observed and fulfilled with good faith by the United States and the citizens thereof," and shall be subject also to such regulations as may be established from time to time by authority of subsequent acts and treaties of the United States.

3. The authority conferred by this License is subject to the provisions of the act of February 4, 1887, entitled "An Act to regulate commerce," as amended by the act of June 18, 1910, so far as the Licensee may be within the operation of said act, and except as provided in the act of August 13, 1912, or in the International Radiotelegraphic Convention and regulations made part thereof, the station shall transmit all messages offered by those who tender lawful rates on equal terms without discrimination, whether as regards rates, order of transmission, or otherwise.

4. The licensee shall render to the Secretary of Commerce such accounts as the Secretary of Commerce shall direct in respect of all charges due or payable under the International Radiotelegraphic Convention in respect of messages exchanged between the station hereby licensed and other stations and shall pay to the Secretary of Commerce, at such times and in such manner as the Secretary of Commerce shall direct, all sums which shall be due from the Licensee under such accounts.

5. The apparatus shall at all times while in use and operation be in charge or under the supervision of a person or persons licensed for that purpose by the Secretary of Commerce, and the operator of the apparatus shall not willfully or maliciously interfere with any other radio communication.

6. The station shall give absolute priority to signals and radiograms relating to ships in distress; shall cease all sending on hearing a distress signal; and, except when engaged in answering or aiding the ship in distress, shall refrain from sending until all signals and radiograms relating thereto are completed.

7. The station during the hours of operation shall listen in at intervals of not less than 15 minutes and for a period of not less than 2 minutes with the receiver tuned to receive messages of 300 meters wave length.

8. The station shall use the minimum amount of energy necessary to carry out any communication desired, except in case of signals or radiograms relating to vessels in distress.

9. The station shall exchange radiograms with any other commercial station and with any ship station without distinction of the radio systems adopted by such stations.

10. The station shall not use a transmitter during the first 15 minutes of each hour, local standard time, except for distress signals, whenever the Secretary of Commerce by notice in writing shall require it to observe a division of time, pursuant to the Twelfth Regulation of the act of August 13, 1912.

11. The President of the United States in time of war or public peril or disaster is authorized by law to close the station and cause the removal therefrom of all radio apparatus or may authorize the use or control of the station or apparatus by any department of the Government upon just compensation to the owners.

12. The Secretary of Commerce and Collectors of Customs or other officers of the Government authorized by him may at all reasonable times enter upon the station for the purpose of inspecting and may inspect any apparatus for radio communication of such station and the operation and operators of such apparatus.

13. The apparatus shall not be altered or modified in respect of any of the particulars mentioned in the following schedule, except with the approval of the Secretary of Commerce.

SCHEDULE OF STATION AND APPARATUS

Location: State, _________________________; County, ___________________________
City or Town, ______________; Street, ________________; No. __________
____
____
Geographical location: Latitude, N. ___° ___' ___"; Longitude, W. ___° ___' ___"
Specific hours authorized during which the station must be open to service (local standard time):
____
Power: Transformer input, __________________________________ KW.

Normal day range in nautical miles with ships at sea, ____________________
Time and method, if any, of sending time signals and hydrographic and meteorological radiograms:
____
____

Call letters, _____
______________; Coast charges: per word _____, minimum per radiogram _____
______________; Coast charges: per word _____, minimum per radiogram _____
______________; Coast charges: per word _____, minimum per radiogram _____

Radiotelegraphic system employed: ____________________________________
Characteristics of transmitting system:
Type of spark gap, ______________________________________
Approximate spark frequency, ____________________________
____
Characteristics of receiving system:
Type of receiver, ______________________________________
Wave length of receiving system: From __________ meters to ________ meters.
Antenna: Number of masts, _______________; Height, _____, _____, _____, _____
____
Type of aerial, ____
Wires: Number, _____________; Size and kind, __________________
Wires: Essential dimensions, _____________________________________
____
____

WAVE LENGTHS

The normal sending and receiving wave length shall be _____ meters, and no other wave length shall be used for general public correspondence with any foreign ship or foreign coast station, except for long-range public service or purposes other than general public correspondence.

The station shall at all times, except as provided in the seventh paragraph of this License, be ready to receive messages of such wave lengths as are required by the International Radiotelegraphic Convention; shall be prepared to use two sending wave lengths, one of 300 meters and one of 600 meters, as required by the International Radiotelegraphic Convention in force; and tuning positions on the receiver shall be plainly marked: *Provided*, That the Secretary of Commerce may, in his discretion, change the limit of wave length reservations to accord with any international agreement to which the United States is a party.

For long-range public service and for any service other than general public correspondence the station is authorized to use the following additional wave lengths under 600 or over 1,600 meters:
Meters, _______; Meters, _______; Meters, _______; Meters, _______; Meters, _______

The energy, if radiated by the transmitter in two or more wave lengths as indicated by a sensitive wave meter, shall not in any one of the lesser waves exceed 10 per cent of that in the greatest; and the logarithmic decrement per complete oscillation in the wave trains shall not exceed two-tenths, except when sending signals or messages relating to vessels in distress.

SENDING WAVE LENGTH *	ANTENNA CURRENT (AMPERES)	LOGARITHMIC DECREMENT	READING OF WAVE METER INDICATING INSTRUMENT+	
			PRINCIPAL WAVE	WAVE NEXT IN ENERGY
600 meters . . .				
300 meters . . .				
meters . . .				
meters . . .				
meters . . .				
meters . . .				

* Underscore normal

+ Type of indicating instrument, ____________________

The station insures rapid exchange with land stations of the

________________________________ ________________________________
(Company) (Location telegraph office)

________________________________ ________________________________
(Company) (Location telegraph office)

In the following manner: ____

____

Satisfactory proof has been furnished that the station was actually operating August 13, 1912.
This license will expire on the ____________ day of ______________, 191

____
Secretary of Commerce

[Seal of
Department of
Commerce]

____
Commissioner of Navigation

Washington, D. C., ____________________, 191

INSPECTIONS

DATE	INSPECTOR	REMARKS

No. ______

LICENSE FOR SHIP RADIO STATION.

DEPARTMENT OF COMMERCE.
BUREAU OF NAVIGATION.

RADIO SERVICE.

Pursuant to the act to regulate radio communication, approved August 13, 1912, ____________________, a citizen of the State of ____________________, ____ a company incorporated under the laws of the State of ________________, having applied therefor, is hereby granted by the Secretary of Commerce for a period of ___________, on and subject to the restrictions and conditions hereinafter stated and revocable for cause by him, this License to use or operate the apparatus for radio communication (identified in the schedule hereinafter) on the [Type of vessel.], called [Name of vessel.], a vessel of the United States, official number _______, for the purpose of transmitting to and receiving from ship stations and other land stations general public correspondence, Government and service correspondence, and distress signals and messages, at rates of compensation not in excess of those fixed by the international agreement to which the Government of the United States has adhered, which have been submitted to and approved by the Secretary of Commerce, as included in the schedule hereinafter.

2. The use or operation of apparatus for radio communication pursuant to this License shall be subject also to the articles and regulations established by the International Radiotelegraphic Convention, ratified by the Senate of the United States and caused to be made public by the President "to the end that the same and every article and clause thereof may be observed and fulfilled with good faith by the United States and the citizens thereof," and shall be subject also to such regulations as may be established from time to time by authority of subsequent acts and treaties of the United States.

3. The authority conferred by this License is subject to the provisions of the act of February 4, 1887, entitled "An Act to regulate commerce," as amended by the act of June 18, 1910, so far as the Licensee may be within the operation of said act, and except as provided in the act of August 13, 1912, or in the International Radiotelegraphic Convention and regulations made part thereof, the station shall transmit all messages offered by those who tender lawful rates on equal terms without discrimination, whether as regards rates, order of transmission, or otherwise.

4. The Licensee shall render to the Secretary of Commerce such accounts as the Secretary of Commerce shall direct in respect of all charges due or payable under the International Radiotelegraphic Convention in respect of messages exchanged between the station hereby licensed and other stations and shall pay to the Secretary of Commerce, at such times and in such manner as the Secretary of Commerce shall direct, all sums which shall be due from the Licensee under such accounts.

5. The apparatus shall at all times while in use and operation be in charge or under the supervision of a person or persons licensed for that purpose by the Secretary of Commerce, except when in case of emergency the Collector of Customs by authority of the Secretary of Commerce shall issue a temporary permit, in lieu of a license, to the operator. The operator of the apparatus shall not willfully or maliciously interfere with any other radio communication.

6. The station shall give absolute priority to signals and radiograms relating to ships in distress; shall cease all sending on hearing a distress signal; and, except when engaged in answering or aiding the ship in distress, shall refrain from sending until all signals and radiograms relating thereto are completed.

7. The station shall be prepared to send the international signal of distress and distress signals on the normal wave length designated by the International Radiotelegraphic Convention in force with sufficient power to enable them to be received by day over sea a distance of 100 nautical miles by a ship station equipped with apparatus for sending and receiving equal in all essential particulars to the apparatus of the station herein licensed.

8. The station shall use the minimum amount of energy necessary to carry out any communication desired, except in case of signals or radiograms relating to vessels in distress.

9. The station shall exchange radiograms with any other commercial station and with any ship station without distinction of the radio systems adopted by such stations.

10. The station shall not use, except for sending signals of distress or signals and radiograms relating thereto, or when, owing to unusual circumstances, communication can be established only by means of an increase of power, a transformer input exceeding one kilowatt, or exceeding one-half kilowatt when within 5 nautical miles of a naval or military station.

11. The President of the United States in time of war or public peril or disaster is authorized by law to close the station and cause the removal therefrom of all radio apparatus or may authorize the use or control of the station or apparatus by any department of the Government upon just compensation to the owners.

12. The Secretary of Commerce and Collectors of Customs or other officers of the Government authorized by him may at all reasonable times enter upon the station for the purpose of inspecting and may inspect any apparatus for radio communication of such station and the operation and operators of such apparatus.

13. The apparatus shall not be altered or modified in respect of any of the particulars mentioned in the following schedule, except with the approval of the Secretary of Commerce.

SCHEDULE OF STATION AND APPARATUS

Ship: Name, ________________________; Owner, ______________________
Home port, ______________________; International code letters, _____________

Radio call letters, _____

Nature of service: ________________________________

Hours of operation: ________________________________

Power: Transformer input, _______ K. W. Primary source of power, ___________

Normal day range in nautical miles with other ships at sea, _____________

Ship charge: Per word, ______; Minimum per radiogram, ______________

Per word, ______; Minimum per radiogram, ______________

Radiotelegraphic system employed: ______________________________________

Characteristics of transmitting system:

Type of spark gap, ____

Approximate spark frequency, ______________________________

____

Characteristics of receiving system:

Type of receiver, ____

Wave length of receiving system: From __________ meters to ________ meters.

____

Antenna: Number of masts, _______________; Height, _____, _____, _____, _____

Type of aerial, ____

Wires: Number, _____________; Size and kind, _________________

Wires: Essential dimensions, ______________________________________

____

Auxiliary apparatus: Type, ____

Power: Source, __________________; Normal day range with ships, ________________

WAVE LENGTHS

The normal sending and receiving wave length shall be 600 meters, and the station shall be prepared to use two sending wave lengths, one of 600 meters and one of 300 meters, as required by the International Radiotelegraphic Convention in force; and tuning positions shall be plainly marked: *Provided*, That the Secretary of Commerce may, in his discretion, change the limit of wave length reservations to accord with any international agreement to which the United States is a party.

A wave length of _____ meters and the following additional wave lengths not exceeding 600 meters may be employed as authorized by law and treaty:

Meters, _______; Meters, _______; Meters, _______; Meters, _______; Meters, _______

The energy, if radiated by the transmitter in two or more wave lengths as indicated by a sensitive wave meter, shall not in any one of the lesser waves exceed 10 per cent of that in the greatest; and the logarithmic decrement per complete oscillation in the wave trains shall not exceed two-tenths, except when sending signals or messages relating to vessels in distress and in sending distress signals when the transmitter may be tuned to create a maximum of interference with a maximum of radiation.

SENDING WAVE LENGTH *	ANTENNA CURRENT (AMPERES)	LOGARITHMIC DECREMENT	READING OF WAVE METER INDICATING INSTRUMENT+	
			PRINCIPAL WAVE	WAVE NEXT IN ENERGY
600 meters . . .				
300 meters . . .				
meters . . .				
meters . . .				
meters . . .				

* Underscore normal

+ Type of indicating instrument, ____________________

The station in general shall transmit its radiograms to the nearest coast station. The sender shall have the right, however, to designate the coast station through which he desires to have his radiograms transmitted, and his wishes shall be complied with only if the transmission can be effected without interfering with the service of other stations, or the shipboard station shall wait until such coast station shall be the nearest as provided by the International Convention in force.

Satisfactory proof has been furnished that the station was actually operating August 13, 1912.

This license will expire on the ___________ day of _____________, 191

____
Secretary of Commerce

[Seal of
Department of
Commerce]

____
Commissioner of Navigation

Washington, D. C., _________________, 191

INSPECTIONS

DATE	INSPECTOR	REMARKS

No. _____

LICENSE FOR LAND RADIO STATION.

CLASS ________________________

DEPARTMENT OF COMMERCE.
BUREAU OF NAVIGATION.
RADIO SERVICE.

Pursuant to the act to regulate radio communication, approved August 13, 1912, ___________________, a citizen of the State of _________________, _____________________________________ a company incorporated under the laws of the State of _______________, having applied therefor, is hereby granted by the Secretary of Commerce for a period of ________ on and subject to the restrictions and conditions hereinafter stated and revocable for cause by him, this License to use or operate the apparatus for radio communication (identified in the schedule hereinafter) located in the State of ____________, city or town of ___________, for the purpose of transmitting to and receiving from ship stations and other land stations general public correspondence, Government and service correspondence, and distress signals and messages, at rates of compensation not in excess of those fixed by the international agreement to which the Government of the United States has adhered, which have been submitted to and approved by the Secretary of Commerce, as included in the schedule hereinafter, or for the purpose of conducting experiments for the development of the science of radio communication or the apparatus pertaining thereto, to carry on special tests, using any amount of power or any wave lengths, at such hours and under such conditions as will insure the least interference with the sending or receipt of commercial or Government radiograms, of distress signals and radiograms, or with the work of other stations, the purpose of the station being designated by the classification at the head of this License.

2. Public correspondence or limited commercial correspondence authorized by this License shall be limited to certain stations, ships or lines of ships named hereinafter, which designation is authorized in view of the nature of the service and is independent of the radio system employed.

3. The use or operation of apparatus for radio communication pursuant to this License shall be subject also to the articles and

regulations established by the International Radiotelegraphic Convention, ratified by the Senate of the United States and caused to be made public by the President, and shall be subject also to such regulations as may be established from time to time by authority of subsequent acts and treaties of the United States, in so far as they apply to the class of station indicated by this License.

4. The authority conferred by this License is subject to the provisions of the act of February 4, 1887, entitled "An Act to regulate commerce," as amended by the act of June 18, 1910, so far as the Licensee may be within the operation of said act, and except as provided in the act of August 13, 1912, or in the International Radiotelegraphic Convention and regulations made part thereof, the station shall transmit all messages offered by those who tender lawful rates on equal terms without discrimination, whether as regards rates, order of transmission, or otherwise.

5. The Licensee shall render to the Secretary of Commerce such accounts as the Secretary of Commerce shall direct in respect of all charges due or payable under the International Radiotelegraphic Convention in respect of messages exchanged between the station hereby licensed and other stations and shall pay to the Secretary of Commerce, at such times and in such manner as the Secretary of Commerce shall direct, all sums which shall be due from the Licensee under such accounts.

6. The apparatus shall at all times while in use and operation be in charge or under the supervision of a person or persons licensed for that purpose by the Secretary of Commerce, and the operator of the apparatus shall not willfully or maliciously interfere with any other radio communication.

7. The station shall give absolute priority to signals and radiograms relating to ships in distress; shall cease all sending on hearing a distress signal; and, except when engaged in answering or aiding the ship in distress, shall refrain from sending until all signals and radiograms relating thereto are completed.

8. The station shall use the minimum amount of energy necessary to carry out any communication desired, except in case of signals or radiograms relating to vessels in distress.

9. The station shall not use a transmitter during the first 15 minutes of each hour, local standard time, except for distress signals, whenever the Secretary of Commerce by notice in writing shall require it to observe a division of time, pursuant to the Twelfth Regulation of the act of August 13, 1912.

10. The President of the United States in time of war or public peril or disaster is authorized by law to close the station and cause the removal therefrom of all radio apparatus or may authorize the use or control of the station or apparatus by any department of the Government upon just compensation to the owners.

11. The Secretary of Commerce and Collectors of Customs or other officers of the Government authorized by him may at all reasonable times enter upon the station for the purpose of inspecting and may inspect any apparatus for radio communication of such station and the operation and operators of such apparatus.

12. The apparatus shall not be altered or modified in respect of any of the particulars mentioned in the following schedule, except with the approval of the Secretary of Commerce.

SCHEDULE OF STATION AND APPARATUS

Name of owner, ______________________________
Location: State, ____________________; County, ____________________
City or Town, ______________; Street, ______________; No. __________
____
____
Geographical location: Latitude, N. ___° ___′ ___″; Longitude, W. ___° ___′ ___″
This station is licensed for communication only with the following land stations, ships, or lines of ships:

______________ ______________ ______________
______________ ______________ ______________
______________ ______________ ______________
______________ ______________ ______________

Specific hours during which the station {must/may} be open to service (local standard time): _____
______________________________________ __________
Power: Transformer input, ______________________________ KW.
Normal day range in nautical miles, ______________________________
Time and method, if any, of sending time signals and hydrographic and meteorological radiograms:
____
____

Call letters, _____

______________; Coast charges: per word _____, minimum per radiogram _____
______________; Coast charges: per word _____, minimum per radiogram _____
______________; Coast charges: per word _____, minimum per radiogram _____
______________; Coast charges: per word _____, minimum per radiogram _____

Radiotelegraphic system employed: ______________________________
Characteristics of transmitting system:

Type of spark gap, ________ ________________________________
Approximate spark frequency, ______________________________
____
Wave length of receiving system: From __________ meters to ________ meters.
Antenna: Number of masts, _______________; Height, _____, _____, _____, _____
____
Type of aerial, ____
Wires: Number, _____________; Size and kind, __________________
Wires: Essential dimensions, ____
____
____

WAVE LENGTHS

The normal sending and receiving wave length shall be _____ meters.

If the station be classified as a coast station it shall be prepared to transmit or relay distress calls or messages using the distress wave length as provided by the International Radiotelegraphic Convention in force.

In view of special conditions the station is authorized to use for communication exclusively with station licensed by the United States the following additional wave lengths under 600 or over 1,600 meters:
Meters, _______; Meters, _______; Meters, _______; Meters, _______

The energy, if radiated by the transmitter in two or more wave lengths as indicated by a sensitive wave meter, shall not in any one of the lesser waves exceed 10 per cent of that in the greatest; and the logarithmic decrement per complete oscillation in the wave trains shall not exceed two-tenths, except when sending signals or messages relating to vessels in distress.

SENDING WAVE LENGTH	ANTENNA CURRENT (AMPERES)	LOGARITHMIC DECREMENT	READING OF WAVE METER INDICATING INSTRUMENT*	
			PRINCIPAL WAVE	WAVE NEXT IN ENERGY
600 meters . . .				
300 meters . . .				
meters . . .				
meters . . .				
meters . . .				
meters . . .				

* Type of indicating instrument, ____________________

The station insures rapid exchange with land wire stations at

(Company)	(Location telegraph office)
(Company)	(Location telegraph office)

In the following manner: ______________________________

Satisfactory proof has been furnished that the station was actually operating August 13, 1912.
This license will expire on the __________ day of ____________, 191

Secretary of Commerce

[Seal of
Department of
Commerce]

Commissioner of Navigation

Washington, D. C., ________________, 191

INSPECTIONS

DATE	INSPECTOR	REMARKS

Number.

LICENSE FOR [General or restricted.] AMATEUR RADIO STATION.

DEPARTMENT OF COMMERCE.
BUREAU OF NAVIGATION.
RADIO SERVICE.

Pursuant to the act to regulate radio communication, approved August 13, 1912, ________________, a citizen of the State of ________________, having applied therefor, is hereby granted by the Secretary of Commerce, for a period of _____ year __, on and subject to the restrictions and conditions hereinafter stated and revocable for cause by him, this License to use or operate the apparatus for radio communication (identified in the Schedule hereinafter) for the purpose of transmitting private radiograms or signals, notwithstanding the effect thereof extends beyond the jurisdiction of the State or Territory in which the said station is located: *Provided*, That no interference other than may result under the restrictions contained in this License shall be caused with the radio communication of stations of the Government of the United States or licensed stations.

2. The use or operation of apparatus for radio communication pursuant to this License shall be subject also to the articles and regulations established by the International Radiotelegraphic Convention, ratified by the Senate of the United States and caused to be made public by the President, and shall be subject also to such regulations as may be established from time to time by authority of subsequent acts and treaties of the United States.

3. The apparatus shall at all times while in use and operation be in charge of a person or persons licensed for that purpose by the Secretary of Commerce, and the operator of the apparatus shall not wilfully or maliciously interfere with any other radio communication.

4. The station shall give absolute priority to signals or radiograms relating to ships in distress; shall cease all sending on

hearing a distress signal; and shall refrain from sending until all the signals and radiograms relating thereto are completed.

5. The station shall use the minimum amount of energy necessary to carry out any communication desired, and the transformer input shall not exceed {one/one-half} kilowatt. [Strike out "one" if the station be within 5 nautical miles of a naval or military station; otherwise strike out "one-half."]

6. The station shall not use a transmitting wave length exceeding 200 meters.

7. The station shall not use a transmitter during the first 15 minutes of each hour, local standard time, whenever the Secretary of Commerce by notice in writing shall require it to observe a division of the time, pursuant to the Twelfth Regulation of the act of August 13, 1912.

8. The President of the United States in time of war or public peril or disaster is authorized by law to close the station and cause the removal therefrom of all radio apparatus, or may authorize the use or control of the station or apparatus by any department of the Government upon just compensation to the owners.

9. The Secretary of Commerce and Collectors of Customs or other officers of the Government authorized by him may at all reasonable times enter upon the station for the purpose of inspecting and may inspect any apparatus for radio communication of such station and the operation and operators of such apparatus.

10. The apparatus shall not be altered or modified in respect of any of the particulars mentioned in the following Schedule except with the approval of a radio inspector or other duly authorized officer of the Government.

SCHEDULE OF STATION AND APPARATUS

Name of owner, ______________________________; Age, ____________
Location: State, ____________________; County, ________________________
City or town, ____________; Street, _______________; No. _________
Official call, ____
Name of naval or military station, if within 5 nautical miles, _________
____
Power: Transformer input, ____________________________ W.*
[* Not to exceed 1,000; or if the station be within 5 nautical miles of a naval or military station, not to exceed 500.]
Antenna: Type (**T**, ¬, fan, umbrella, etc.), ________________
Height, (Above Ground); Horizonal length, __________
Wires: Number in vertical part, ____________; In horizonal part, ________
The normal sending and receiving wave length shall be (Not exceeding 200.) meters and the station is authorized to use the following additional wave lengths, not exceeding 200 meters: _____ meters, _____meters.
Satisfactory proof has been furnished that the station was actually operating August 13, 1912.
This License expires on ____________, 191

EDWIN F. SWEET,
Assistant Secretary of Commerce

E. T. CHAMBERLAIN,
Commissioner of Navigation.
Delivered by (Radio inspector.)
Place, ________________, Date, __________________, 191

No. ______

THE UNITED STATES OF AMERICA.
DEPARTMENT OF COMMERCE.
BUREAU OF NAVIGATION.

LICENSE TO RADIO OPERATOR, COMMERCIAL EXTRA FIRST GRADE.

This is to certify that ________________________ has been examined and passed, pursuant to the Radiotelegraphic Convention, in

(a) adjustment, operation and care of apparatus;
(b) transmitting and sound reading at a speed of _______ words a minute, Continental Morse, and ______ words a minute, American Morse;
(c) use and care of storage battery or other auxiliary;
(d) knowledge of international regulations and Acts of Congress to regulate radio communication;
(e) knowledge of United States Naval Radio Regulations;

and is hereby licensed, as required by law, a Radio Operator, Commercial Extra First Grade, for two years.

In testimony of trustworthiness and efficient service as Radio Operator for _______ months, of which _______ months were service at sea, and of superior knowledge and skill, ascertained by special examination, this extra grade license is granted.

(Examining Officer.) Oath of Secrecy executed. ________________
(Title.) ____________________ *Secretary of Commerce.*
Notary Public. ________________
Place ______________ Date ________ 191 *Commissioner of Navigation.*

No. ______

THE UNITED STATES OF AMERICA.
DEPARTMENT OF COMMERCE.
BUREAU OF NAVIGATION.

LICENSE TO RADIO OPERATOR, COMMERCIAL {First or Second.} GRADE.

This is to certify that ____________________________ has been examined and passed, pursuant to the Radiotelegraphic Convention, in

(a) adjustment, operation and care of apparatus;
(b) transmitting and sound reading at a speed of {Twenty or Twelve.} words a minute, Continental Morse;
(c) use and care of storage battery or other auxiliary;
(d) knowledge of international regulations and Acts of Congress to regulate radio communication;

and is hereby licensed, as required by law, a Radio Operator, Commercial {First or Second.} grade, for two years.

The candidate's practical knowledge of adjustment was tested on a ____________ set of apparatus. His knowledge of other systems is shown below.

____
____
____

(Examining Officer.) Oath of Secrecy executed. WILLIAM C. REDFIELD,
(Title.) ____________________ *Secretary of Commerce.*
Notary Public. E. T. CHAMBERLAIN,
Place ______________ Date ________ 191 *Commissioner of Navigation.*

No. ______

THE UNITED STATES OF AMERICA.
DEPARTMENT OF COMMERCE.
BUREAU OF NAVIGATION.

LICENSE TO RADIO OPERATOR, AMATEUR FIRST GRADE.

This is to certify that ____________________________ has been examined and shown to have a knowledge of the adjustment and operation of apparatus and of the regulations of the Radiotelegraphic Convention and the Acts of Congress in so far as they relate to interference with radio communication and impose certain duties on all grades of operators, sufficient to entitle him to a license, and he is hereby licensed as required by law, Radio Operator, Amateur First Grade, for two years.

The candidate was examined and shown to have knowledge (excellent or good) of the following subjects:

(a) general adjustment, operation and care of apparatus {Excellent or good};
(b) transmitting and sound reading Continental Morse at a speed of {Insert speed.} words a minute;
(c) general knowledge of international regulations and Acts of Congress to regulate radio communication {Excellent or good};

(Examining Officer.)	Oath of Secrecy executed.	WILLIAM C. REDFIELD,
(Title.)	____________________	*Secretary of Commerce.*
	Notary Public.	E. T. CHAMBERLAIN,
Place ______________	Date ________ 191	*Commissioner of Navigation.*

No. ______

THE UNITED STATES OF AMERICA.
DEPARTMENT OF COMMERCE.
BUREAU OF NAVIGATION.
RADIO SERVICE.

LICENSE TO RADIO OPERATOR, AMATEUR SECOND GRADE.

This is to certify that ______________________________ has presented satisfactory evidence that he has a knowledge of the adjustment and operation of apparatus and of the regulations of the Radiotelegraphic Convention and the Acts of Congress, in so far as they relate to interference with radio communication and impose certain duties on all grades of operators, sufficient to entitle him to a license, and he is hereby temporarily licensed as Radio Operator, Amateur Second Grade, for the period of eight months or until he has been duly examined.

He has shown he has knowledge (excellent or good) of the following subjects:

(a) General adjustment, operation and care of apparatus {Excellent or good};
(b) Transmitting and sound reading Continental Morse at a speed of _______ words a minute;
(c) General knowledge of international regulations and Acts of Congress to regulate radio communication {Excellent or good};

(Certifying Officer.)	Oath of Secrecy executed.	WILLIAM C. REDFIELD,
(Title.)	____________________	*Secretary of Commerce.*
	Notary Public.	E. T. CHAMBERLAIN,
Place ______________	Date ________ 191	*Commissioner of Navigation.*

[Operators licences are not valid until the following oath has been executed on the backs of the licenses.]

I, ______________, do solemnly swear that I will faithfully preserve the secrecy of all messages coming to my knowledge through my employment under this license; that this obligation is taken freely, without mental reservation or purpose of evasion; and that I will well and faithfully discharge the duties of the office: So help me God.

(Signature of holder.)

Date of birth, ____________________ Place of birth, ________________

Sworn to and subscribed before me this ____________ day of _____________, A. D., 191

____
Notary Public.

[SEAL.]

SERVICE RECORD.

This is to certify that the holder of this license has served satisfactorily as radio operator under my orders during the period named.

Name of Ship or Land Station.	Period.	Master, Manager, or Superintendent.
____________	From ______, 19__, to ______, 19__.	____________
____________	From ______, 19__, to ______, 19__.	____________
____________	From ______, 19__, to ______, 19__.	____________
____________	From ______, 19__, to ______, 19__.	____________
____________	From ______, 19__, to ______, 19__.	____________
____________	From ______, 19__, to ______, 19__.	____________
____________	From ______, 19__, to ______, 19__.	____________
____________	From ______, 19__, to ______, 19__.	____________
____________	From ______, 19__, to ______, 19__.	____________
____________	From ______, 19__, to ______, 19__.	____________

Operators must have the service record on the backs of their licenses properly completed and signed by the master of their ship or their employer.

DEPARTMENT OF COMMERCE.
RADIO SERVICE.

INTERNATIONAL MORSE CODE AND CONVENTIONAL SIGNALS.

[To be used for all general public service radio communication. (1) A dash is equal to three dots; (2) the space between parts of the same letter is equal to one dot; (3) the space between two letters is equal to three dots; (4) the space between two words is equal to five dots.]

A .-
B -...
C -.-.
D -..
E .
F ..-.
G --.
H ....
I ..
J .---
K -.-
L .-..
M --
N -.
O ---
P .--.
Q --.-
R .-.
S ...
T -
U ..-
V ...-
W .--
X -..-
Y -.--
Z --..

Ä (German) .-.-
Á or Å (Spanish-Scandinavian) .--.-
CH (German-Spanish) ----

Period	.. .. ..
Semicolon	-.-.-.
Comma	.-.-.-
Colon	---...
Interrogation	..--..
Exclamation point	--..--
Apostrophe	.----.
Hyphen	-....-
Bar indicating fraction	-..-.
Parenthesis	-.--.-
Inverted Commas	.-..-.
Underline	..--.-
Double dash	-...-
Distress call	...---...
Attention call to precede every transmission	-.-.-
General inquiry call	-.-. --.-
From (de)	-.. .
Invitation to transmit (go ahead)	-.-
Warning--high power	--..--
Question (please repeat after ......) --interrupting long messages	..--..
Wait	.-...

CH (German-Spanish) ----
É (French) ..--..
Ñ (Spanish) --.--
Ŏ (German) ---.
Ŭ (German) ..--

1 .----
2 ..---
3 ...--
4 ....-
5 .....
6 -....
7 --...
8 ---..
9 ----.
0 -----

Break (Bk.) (double dash)	-...-
Understand	...-.
Error	....
Received (O. K.)	.-.
Position report (to precede all position messages)	- .-.
End of each message (cross)	.-.-.
Transmission finished (end of work) (conclusion of correspondence)	...-.-

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Amendments to the Aug. 15, 1919 Edition of Radio Communication Laws of the United States.

Amendments to the August 15, 1919 edition of *Radio Laws and Regulations of the United States*, reported in the *Radio Service Bulletin*, from issue #33 through issue #73 (January 1, 1920 through May 1, 1923). NOTE: Text within [brackets] are explanatory additions:

RSB Issue

[Regulations pursuant to the act of August 13, 1912.]
[To be cut out and pasted in your copy.]

May 1, 1920
(No. 37)

Paragraph 86, page 58, amended April 15, 1920 to read:

When applications and forms have been properly submitted, *ship and amateur* stations may be operated in accordance with the laws and regulations governing the class of station for which application for license has been made, until such time as the application can be acted upon unless the applicant is otherwise instructed and provided temporary official call letters are assigned.

Paragraph 119, page 63, amended May 1, 1920 to read:

If the applicant qualifies, the radio inspector or examining officer will forward the papers to the Commissioner of Navigation, with his recommendation. If approved, the license will be properly indorsed by the Secretary of Commerce and delivered to the licensee through the recommending officer.

It will be noted that the following was eliminated from the above paragraph: *"A blank commercial license, with."*

October 1, 1920
(No. 42)

Paragraph 9, page 50, amended October 1, 1920 to read:

Every ship station shall carry a reasonable number of spares of such parts of both the main and emergency radiotelegraph equipments as are subject to undue wear, deterioration, or liability to accident, *and the tools to make the necessary repairs at sea.*

November 1, 1920
(No. 43)

Paragraph 111, page 62, amended November 1, 1920 to read:

The examination will be conducted so as to determine the following facts: (*a*) That the applicant is sufficiently familiar with the Continental Morse Code to recognize the distress signal (S O S) when included in a list of other words or signals sent slowly (approximately *ten* words a minute); (*b*) that the applicant is sufficiently familiar with the Continental Morse Code to recognize radio call letters of the vessel on which he desires to operate when sent slowly and repeated several times; (*c*) that the applicant is sufficiently familiar with the type of the receiving apparatus of the vessel on which he desires to operate to determine by a buzzer or similar test that the detector or receiving apparatus is properly adjusted to receive signals.

May 2, 1921
(No. 49)

Paragraph 153, page 67, amended April 9, 1921, is modified by the addition of the following proviso:

"provided that such renewal of licenses may also be issued in the discretion of the radio inspector where the service record on the back of the license shows 12 months satisfactory service during the two-year period of the license."

June 1, 1921
(No. 50)

Paragraph 86, page 58, repealed [May 28, 1921].

Paragraph 86 of the Regulations Governing Radio Communication, edition of August 15, 1919, page 58, is hereby repealed to take effect on July 1, 1921, as to stations now operating without license under paragraph 86, and to take effect immediately as to new stations for which applications may be filed under paragraph 86.

January 3, 1922
(No. 57)

Paragraph 57, page 55, amended December 1, 1921 to read:

CLASS 2.--Limited commercial stations are not open to public service and are licensed for a specific commercial service or services defined in the license. Stations of this class must not transmit to or accept public messages from other stations. No rates are authorized. *Licenses of this class are required for all transmitting radio stations used for broadcasting news, concerts, lectures, and such matter. A wave length of 360 meters [833 kilohertz] is authorized for such service, and a wave length of 485 meters [619 kilohertz] is authorized for broadcasting crop reports and weather forecasts, provided the use of such wave lengths does not interfere with ship to shore or ship to ship service.*

Paragraph 58, page 55, which reads:

"If a coast station, the operators shall hold a commercial second-grade license or higher." (Par. 57) is amended, effective January 10, 1922, to read: *"Operators of limited commercial stations shall hold a commercial second-grade license or higher."*

September 1, 1922
(No. 65)

Paragraph 57, page 55, amended August 8, 1922 to read:

CLASS 2.--Limited commercial stations are not open to public service and are licensed for a specific commercial service or services defined in the license. Stations of this class must not transmit to or accept public messages from other stations. No rates are authorized. Licenses of this class are required for all transmitting

radio stations used for broadcasting news, concerts, lectures, and such matter. A wave length of 360 meters [833 kilohertz] is authorized for such service, and a wave length of 485 meters [619 kilohertz] is authorized for broadcasting crop reports and weather forecasts, provided the use of such wave lengths does not interfere with ship to shore or ship to ship service.

Class B radiotelephone broadcasting stations.

A new class of radiotelephone broadcasting station license is hereby established to be known as class B.

A license will not be issued for a station in this class which does not comply in every respect with the specifications hereunder.

Specifications covering the requirements governing the construction, licensing, operating and service of class B radiotelephone broadcasting stations:

Station.

WAVE LENGTH.--The wave length of 400 meters [750 kilohertz] only will be assigned for the use of stations of this class which must be reasonably free from harmonics.

POWER.--The power supply must be dependable and nonfluctuating. The minimum required will be 500 watts in the antenna and the maximum shall not exceed 1,000 watts in the antenna.

MODULATION.--The system must be so arranged as to cause the generated radio frequency current to vary accurately according to the sound impressed upon the microphone system.

SPARE PARTS.--Sufficient tubes and other material must be readily available to insure continuity and reliability of the announced schedule of service.

ANTENNA.--The antenna must be so constructed as to prevent swinging.

SIGNALING SYSTEM.--Some dependable system must be provided for communication between the operating room and the studio.

STUDIO.--The radio equipment in the studio must be limited to that essential for use in the room. The room shall be so arranged as to avoid sound reverberation and to exclude external and unnecessary noises.

Service.

PROGRAMS.--The programs must be carefully supervised and maintained to insure satisfactory service to the public.

MUSIC.--Mechanically operated musical instruments may be used only in an emergency and during intermission periods in regular program.

DIVISION OF TIME.--Where two or more stations of class B are licensed in the same city or locality a division of time will be required if necessary.

Forfeiture of 400 meters privilege.

Licenses issued for the use of the 400 meters wave length [750 kilohertz] shall specifically provide that any failure to maintain the standards prescribed for such stations may result in the cancelation of the license and requiring the station to use the 360 meters wave length [833 kilohertz].

October 2, 1922
(No. 66)

Paragraph 57, page 55:

The specifications applying to class B radiotelephone broadcasting stations are amended [September 22, 1922] to read as follows:

Music. The use of mechanically operated instruments is prohibited.

May 1, 1923
(No. 73)

Paragraph 57, page 55, amended April 2, 1923 to read:

CLASS 2.--Limited commercial stations are not open to public service and are licensed for a specific commercial service or services defined in the license. Stations of this class must not transmit to or accept public messages from other stations. No rates are authorized.

Licenses of this class are required for all transmitting radio stations used for broadcasting news, music, lectures, church services, Government reports, and such matters, and do not permit the transmission of private or commercial communications.

The reading of telegrams or letters by broadcasting stations will not be construed point-to-point communication so long as the signer is not addressed in person and so long as the text matter is of general interest.

Broadcasting stations must be operated by or under the supervision of an operator holding a commercial

second-class license or higher; such operator must be on duty during the entire time the station is being operated

No testing or experimenting is authorized in broadcasting stations between the hours of 10 a. m. and midnight, local standard time.

Broadcasting stations the operation of which interfere with the reception of time signals and meteorological information by marine service must remain silent while such signals are being transmitted.

Class A radiotelephone broadcasting stations.

Class A radiotelephone broadcasting station licenses will be issued to stations equipped to use power not exceeding 500 watts in the antenna and will be assigned a wave length between 222 meters (1,350 kilocycles) and 300 meters (1,000 kilocycles). Where more than one station of this class are licensed in the same city or locality a division of time will be required, if necessary.

Class B radiotelephone broadcasting stations.

A license will not be issued for a station in this class which does not comply in every respect with the specifications hereunder.

Specifications covering the requirements governing the construction, licensing, operating and service of class B radiotelephone broadcasting stations:

Station.

Wave Length.--The wave lengths between 300 and 345 meters and 375 and 545 meters [1,000 through 870 and 800 through 550 kilohertz] only will be assigned for the use of stations of this class, which must be free from harmonics. Whenever necessary the use of a coupled circuit transmitter will be required. Hereafter but one wave length within these ranges, including the 400 meter wave length, will be assigned to any one locality.

Power.--The power supply must be dependable and nonfluctuating. The minimum required will be 500 watts in the antenna and the maximum shall not exceed 1,000 watts in the antenna.

Modulation.--The system must be so arranged as to cause the generated radio frequency current to vary accurately according to the sound impressed upon the microphone system.

Spare Parts.--Sufficient tubes and other material must be readily available to insure continuity and reliability of the announced schedule of service.

Antenna.--The antenna must be so constructed as to prevent swinging.

Signaling system.--Some dependable system must be provided for communication between the operating room and the studio.

Studio.--The radio equipment in the studio must be limited to that essential for use in the room. The room shall be so arranged as to avoid sound reverberation and to exclude external and unnecessary noises.

Service.

Programs.--The programs must be carefully supervised and maintained to insure satisfactory service to the public.

Music.--The use of mechanically operated instruments is prohibited.

Division of time.--Where two or more stations of class B are licensed in the same city or locality a division of time will be required, if necessary.

Forfeiture of Class B privilege.

Licenses issued for the use of the wave lengths between 300 and 345 meters and 375 and 545 meters [frequencies of 1,000 to 870 and 800 to 550 kilohertz] shall specifically provide that any failure to maintain the standards prescribed for such stations may result in the forfeiture of the class B privilege and relicensing of the station to use a wave length below 300 meters [frequency *above* 1000 kilohertz].

Class C radiotelephone broadcasting stations.

All radiotelephone broadcasting stations now licensed to use 360 meters (834 kilocycles) are placed in this class. No new licenses will be issued for stations to use this wave length. Renewal licenses for the use of 360 meters will be granted if desired.

After this date there were no more changes to *Radio Laws and Regulations of the United States* reported in the *Radio Service Bulletin*.

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Selected Announcements from the Radio Service Bulletin, Jan. 1915 to Jan. 2, 1923.

Selected announcements from the *Radio Service Bulletin*, January, 1915 to January 2, 1923 (issues No. 1 through 69). NOTE: Text within [brackets] are explanatory additions.

January, 1915
(No. 1)

RADIO SERVICE BULLETIN

ISSUED MONTHLY BY BUREAU OF NAVIGATION, DEPARTMENT OF COMMERCE

Washington, January, 1915--No. 1

DEPARTMENT OF COMMERCE,
BUREAU OF NAVIGATION,
Washington, January 14, 1915.

To collectors of customs, radio inspectors, and others concerned:

This publication is issued monthly by the Bureau of Navigation, Department of Commerce, and distributed to the United States officers engaged in or concerned with the enforcement of the radio laws for their guidance and instructions, and to those concerned with the operation of Government and commercial radio stations for their information.

The Radio Service Bulletin supersedes the quarterly supplements to the list of Radio Stations of the United States, and will contain information concerning Government, commercial, and special stations only. Information regarding amateur stations will appear only in the annual edition of the list of Radio Stations of the United States.

The bulletin contains tables of new stations, alterations, and corrections under headings, so that the list of Radio Stations of the United States and the list of Radiotelegraph Stations, published by the international bureau at Berne, may be brought up to date. Additions, alterations, and corrections should be entered in these two publications promptly on receipt of the bulletin.

Amendments to or changes in the Radio Laws and Regulations of the United States (edition of July 27, 1914) will be printed in this bulletin in such a manner that they may be clipped and pasted in their proper places in that publication.

Items of general interest concerning the enforcement of the radio laws will be printed in the bulletin from time to time, as occasion warrants.

E. T. CHAMBERLAIN,
Commissioner of Navigation.

Approved:
EDWIN F. SWEET,
Assistant Secretary.

RADIO SERVICE PERSONNEL.

R. E. Thornson, radio inspector at Seattle, resigned January 1, 1915, and R. H. Marriott, one of the radio inspectors at New York, has been transferred to Seattle.

W. O. Hensgen, one of the radio inspectors at New York, resigned January 1, 1915, and C. C. Kolster, assistant radio inspector, has been detailed to New York.

AMATEUR FINED.

A. W. Eaton, of Los Angeles, Cal., who operated his amateur station without a license, was reported by the radio inspector of that district, and was found guilty and fined on November 24, 1914, by Judge Wellborn, of the United States district court.

This case is interesting because the defendant contended that his station did not require a license, inasmuch as he could not interfere with commercial stations in the vicinity or transmit beyond the limits of the State in which his station was located. His conviction was obtained on the ground that he could interfere with the interception of signals from outside that State by licensed amateurs, and establishes a precedent in this regard.

March, 1915
(No. 3)

RADIO SERVICE PERSONNEL.

Changes March 1, 1915:

The headquarters of L. R. Krumm, chief radio inspector, have been transferred to New York.

W. D. Terrell, radio inspector in charge at New York, has been transferred to the radio division of the Bureau of Navigation at Washington.

V. Ford Greaves, radio engineer of the Bureau of Navigation, has been transferred to the radio field service at large and will make a tour of the various radio districts.

THE OHIO FLOOD.

During the recent flood in the Ohio Valley, the Secretary of Commerce detailed J. F. Dillon, radio inspector in charge at Cleveland, to supervise the operation of commercial and amateur radio stations in the district and to cooperate with the authorities to expedite the exchange of messages relative to life and property.

Fortunately the flood did not reach the proportions of the flood of two years ago, and land-line communication was not interrupted. However, Mr. Dillon arranged with the owners of several powerful amateur stations in the flood district to transmit messages if necessary.

Before leaving the district Mr. Dillon inspected many stations with a view to organizing a chain of stations, so that communication can be maintained in the event of a recurrence of the conditions which prevailed during the flood of 1913. Several special amateur station licenses have been granted upon his recommendations.

FALSE CALL LETTERS.

Recently a list of amateur radio stations, published by private parties, came to the attention of the Bureau, and it was observed that several of the call letters of the stations were irregular and probably in some cases constitute violations of the law.

Receiving stations and sending stations which are not required to be licensed under the law should use two-letter or other unofficial signals. All three-letter combinations and the numbers 1 to 9, followed by two or three letters, are official and can only be used by the stations to which they are assigned by the proper Government authority.

Any station using an official call letter or call signal other than that properly assigned may be prosecuted for a violation of section 7 of the act of August 13, 1912.

SPECIAL AMATEUR STATION LICENSES.

The organization of a chain of stations in the Ohio flood district and the organization of the American Radio Relay League has caused an influx of applications for special amateur station licenses.

The attention of all concerned is invited to the Laws and Regulations, edition of July 27, 1914, page 55, paragraphs 63 and 64. Applications will not be considered by the Department if these requirements are not complied with.

The Bureau is satisfied that the American Radio Relay League is organized with a view to complying with the Laws and Regulations in all particulars, and radio inspectors in submitting their recommendations to the Department as to the issue of special amateur station licenses will give due consideration to an indorsement on an application by the proper officers of the league.

If all the requirements of the Laws and Regulations are complied with, the Bureau will approve a limited number of special amateur inland station licenses for members of the league, authorizing the use of a wave length of 425 meters [706 kilohertz].

Very few, if any, special amateur station licenses will be approved for stations along the coast or in localities where the operation of such stations may interfere with maritime, Government, or commercial radio communication. All holders of special amateur station licenses or applicants therefor are warned that such licenses may be suspended or revoked if interference is caused by the working of the stations or if any of the Laws and Regulations are violated.

April, 1915
(No. 4)

SPECIAL SERVICE.

The attention of owners and operators of commercial radio stations is invited to the Laws and Regulations, page 54, paragraphs 49 and 50. General public service may be defined as paid business between coast and ship or ship and ship stations, on the wave lengths of 300, 600, or 1,800 meters, [1000, 500 or 167 kilohertz] conducted at a speed of not less than 20 words per minute. All special service, such as limited public service or other point-to-point communication, and all press items, must be conducted on some authorized wave length, not interfering with general public service.

STATION LICENSES.

Applications for station licenses (Form 761) must be submitted in the name of the person, company, or corporation controlling and operating the radio station and responsible under the law for the operation and for the radio accounts. The applications must be signed by the applicant or by an officer of the company or corporation.

TRANSMISSION OF TIME SIGNALS BY NAVAL RADIO STATIONS.

The transmission of time signals to vessels at sea by means of radiotelegraphy was first accomplished in the United States in 1905, and this service, enlarged and extended, has continued to the present time. This service is of the greatest value to mariners, as it furnishes a means by which the time, as given by the transmitted signals, may be compared with a ship's chronometer and the error of the chronometer found. Similar comparisons over a number of days enable data to be obtained by which not only the error may be found, but also the chronometer rate; that is, the rate at which it is gaining or losing.

The noontime signals on the Atlantic coast are sent out through the coast radio stations by connection with Western Union telegraph lines from the United States Naval Observatory at Washington, D. C. By the operation of proper relays in electrical circuits, the beats of the seconds of a standard clock in the observatory are sent out broadcast as a series of radio dots, commencing five minutes before the time of the final signal. By omitting certain dots in a series, the comparison between the dots and the beats of the chronometer seconds can be checked until the instant of local noon (seventy-fifth meridian time) is reached. This is marked by a longer dot, which gives the time of exact noon. A comparison with the chronometer time at that instant gives its error referred to the seventy-fifth meridian time. Applying the difference in longitude, namely, five hours, between the seventy-fifth meridian and Greenwich, which is the standard meridian (or 0° longitude), the error of the chronometer referred to Greenwich time is determined.

Time signals are now sent out on the Atlantic coast only through the radio stations at Arlington, Key West, and New Orleans. Signals from Arlington, which reach a zone formerly served by other coast stations, are sent out every day in the year twice a day, viz, at noon and 10 p. m., seventy-fifth meridian time. Time signals from Key West and New Orleans are sent out daily, including Sundays and holidays, commencing at 11.55 a. m., seventy-fifth meridian time, and ending at local noon.

In case of failure of the Arlington high-power station, the signals are sent out by the small set in the same station, and the stations at Boston, Newport, Norfolk, and Charleston are notified, and they each send the signals broadcast.

On the Pacific coast the time signals are sent broadcast to sea through the naval radio stations at Mare Island, Eureka, and San Diego, Cal., and at North Head, Wash. The controlling clock for each station is in the naval observatory at the Mare Island Navy Yard. Signals from Mare Island are sent out every day from 11.55 to noon, and from 9.55 to 10 p. m., one hundred and twentieth meridian standard time. Those from North Head, Eureka, and San Diego are sent out daily, excluding Sundays and holidays, from 11.55 to noon, one hundred and twentieth meridian standard time.

To get the maximum clearness of signals, the receiving circuit should be tuned to that of the sending station. Arlington and Mare Island send on a 2,500-meter wave length [120 kilohertz], North Head and San Diego on a 2,000-meter wave length [150 kilohertz], Eureka on a 1,400-meter wave length [214 kilohertz], and Key West and New Orleans on a 1,000-meter wave length [300 kilohertz]. On the completion of the new radio station at the training station, Great Lakes, time signals will be transmitted from that station for the benefit of shipping on the Great Lakes, as well as the weather reports for that region, now transmitted by Arlington after the Atlantic coast weather bulletin, following the 10 p. m. time signals.

RENEWAL OF STATION AND OPERATOR LICENSES.

Applicants for renewal of station and operator licenses must submit the originals of old licenses with application for renewal of same. Operators should be sure to have their service records on the backs of their licenses complete at all times, giving the time of service at all stations at which they are employed.

OPERATOR'S LICENSE SUSPENDED.

A commercial operator recently applied to the examining officer at the Philadelphia Navy Yard for a renewal of his first-grade license and upon examination of his expired license it was found that the service record on the reverse side contained a fraudulent entry.

The operator has been severely reprimanded by the Secretary of Commerce, through the examining officer at the Philadelphia Navy Yard, and his license has been suspended for a period of three months.

COMMERCIAL OPERATOR REPRIMANDED.

The attention of all operators is invited to the Laws and Regulations, page 74, paragraph 210, regarding the use of profane or obscene words in radio communication. Several cases of violations of this regulation have been reported to the Bureau recently. An operator, reported by the radio inspector of the first district, for abbreviating messages in a reprehensible manner, was severely reprimanded by the Secretary of Commerce, and future violations may be subject to more drastic action.

AMATEUR PENALIZED.

An amateur of Portland, Me., was reported recently for operating a station in that city without a license. Judge Hale of the district court of Portland found the amateur guilty and imposed a fine.

RATES.

The rate of 42 cents per word for radiograms transmitted to vessels at sea, at a distance of 400 miles, authorized for the South Wellfleet station of the Marconi Wireless Telegraph Co. of America, was made effective on November 12, 1914. The increase in ship rates from 2 cents to 4 cents per word and the coast rate from 3 cents to 6 cents per word, authorized for the Pacific stations of the Marconi Wireless Co. of America for the North and South American service, was made effective on February 1, 1915.

May, 1915
(No. 5)

TRANSMISSION OF WEATHER REPORTS BY NAVAL RADIO STATIONS.

Through cooperation with local offices of the United States Weather Bureau, weather forecasts are sent broadcast to sea through naval coast radio stations at certain times, varying with the locality. Coast stations are generally prepared to give local forecasts to passing vessels without charge, on request. Storm warnings are sent whenever received and the daily weather bulletins are distributed by the naval radio stations at Arlington, Va., and Key West, Fla., a few minutes after the 10 p. m. time signal. These bulletins consist of two parts.

The first part contains code letters and figures which express the actual weather conditions at 8 p. m., seventy-fifth meridian time, on the day of distribution, at certain points along the eastern coast of North America, one point along the Gulf of Mexico, and one at Bermuda.

The second part of the bulletin contains a special forecast of the probable winds to be experienced a hundred miles or so off shore, made by the United States Weather Bureau, for distribution to shipmasters. The second part of the bulletin also contains warnings of severe storms along the coasts, as occasions for such warnings may arise.

Immediately following this bulletin, a weather bulletin for certain points along the Great Lakes is sent broadcast by the naval radio station at Arlington, Va., consisting of two parts. The first part contains code letters and figures which express the actual weather conditions at 8 p. m., seventy-fifth meridian time, on the day of distribution, at certain points along the Lakes. The second part of the bulletin contains a special forecast of the probable winds to be experienced on the Lakes, during the season of navigation--about April 15 to December 10.

The points for which weather reports are furnished are designated as follows: *For Atlantic coast and Gulf points*, S = Sydney, T = Nantucket, DB = Delaware Breakwater, H = Hatteras, C = Charleston, K = Key West, P = Pensacola, and B = Bermuda; *for points on the Great Lakes*, Du = Duluth, M = Marquette, U = Sault Ste. Marie, G = Green Bay, Ch = Chicago, L = Alpena, D = Detroit, V = Cleveland and F = Buffalo.

All bulletins begin with the letters U. S. W. B. (United States Weather Bureau) and the weather conditions follow. The first three figures of a report represent the barometric pressure in inches (002 = 30.02); the next figure, the fourth in sequence, represents the direction of the wind to the eight points of the compass: 1 = north, 2 = northeast, 3 = east, 4 = southeast, 5 = south, 6 = southwest, 7 = west, 8 = northwest and 0 = calm. The fifth figure represents the force of the wind on the Beaufort Scale, given below.

BEAUFORT SCALE OF WIND FORCE.

Number and Designation.	Statute miles per hour.	Nautical miles per hour.
0 Calm	0 to 3	0 to 2.6
1 Light air	8	6.9
2 Light breeze	13	11.3
3 Gentle breeze	18	15.6
4 Moderate breeze	23	20.0
5 Fresh breeze	28	24.3
6 Strong breeze	34	29.5
7 Moderate gale	40	34.7
8 Fresh breeze	48	41.6
9 Strong gale	56	48.6
10 Whole gale	65	56.4
11 Storm	75	65.1
12 Hurricane	90 and over.	78.1 and over.

In order to simplify the code, no provision has been made for wind force greater than 9, strong gale, on the Beaufort Scale. Whenever winds of force greater than 9 occur, the number representing them is given in words instead of figures, thus: Ten, eleven, etc.

EXAMPLES OF CODE.

U S W B S 96465 T 91674 DB 94686 H 99886 C 01214 K 02622 P 03613 B 00065

Translation.

United States Weather Bureau.

Station.	Pressure.	Wind.	
		Direction.	Force.[1]
Sydney	29.64	SW	5
Nantucket	29.16	W	4
Delaware Breakwater	29.46	NW	6
Hatteras	29.98	NW	6
Charleston	30.12	N	4
Key West	30.26	NE	2
Pensacola	30.36	N	3
Bermuda	30.00	SW	5

[1] See Beaufort Scale

U S W B Du 995826 M 97635 U 00443 G 96046 Ch 95667 L 00644 D 00842 V 01054 F 01656

Translation.

United States Weather Bureau.

Station.	Pressure.	Wind.	
		Direction.	Force.[1]
Duluth	29.58	NE	6
Marquette	29.76	E	5
Sault Ste. Marie	30.04	SE	3
Green Bay	29.60	SE	6
Chicago	29.56	SW	7
Alpena	30.06	SE	4
Detroit	30.08	SE	2
Cleveland	30.10	S	4
Buffalo	30.16	S	6

[1] See Beaufort Scale

RADIO-SERVICE PERSONNEL.

V. Ford Greaves, radio engineer of the Bureau, is making a tour of inspection of the Pacific-coast stations.

Harry Sadenwater, of New York City, has been appointed as an assistant radio engineer in the office of the chief radio inspector at that port.

George B. MacMahon, clerk in the New York office, has been granted six months' leave without pay, on account of ill health, and is now on the Pacific coast.

CHANGE IN ARMY RATES.

The following changes in ship and coast station rates of the United States Army Radio Service, approved by the Secretary of War, will become effective on July 1, 1915:

> The radio rate for stations of the United States Army Radio Service is six cents per word for shore stations and four cents per word for ship stations, ten-word minimum.
>
> The charge, where the radio service is performed wholly between Army ship and shore stations, is, therefore, ten cents per word, and between two Army ship stations, eight cents per word.

July, 1915
(No. 7)

RADIO SERVICE PERSONNEL.

Benjamin E. Wolf, radio inspector in charge of the Bureau's exhibit at the Panama-Pacific International Exposition, has been placed in charge of the Seattle office and Ellery W. Stone, assistant radio inspector at San Francisco, has been detailed to the exposition as the Bureau's representative. William F. Macomber has been appointed as an assistant radio inspector at San Francisco.

R. D. Duncan, jr., assistant radio inspector at New York, has been transferred to the Bureau of Standards.

August, 1915
(No. 8)

RADIO SERVICE PERSONNEL.

Charles Blankenship, of Everett, Mass., formerly radio electrician on the coast-guard cutter *Gresham*, has been appointed as an assistant radio inspector in the service of the Bureau of Navigation at Chicago, Ill.

December, 1915
(No. 12)

LOS ANGELES AMATEURS REPORTED FOR VIOLATIONS.

During a recent visit of V. Ford Greaves, radio engineer of the Bureau, and Ellery W. Stone, assistant radio inspector at San Francisco, the following Los Angeles amateur radio stations were found to be operating in violation of the radio act, and the cases have been referred to the United States district attorney for prosecution:

Hadys Hancock, Venice Pier, Venice, Cal, was found to be using a wave length in excess of 200 meters; maximum penalty, $100.

Richard White, 435 Oakland Avenue, Pasadena, Cal., operating an amateur station without a license and using improper call letters; maximum penalty, $100 fine and imprisonment for not more two months.

Ernest Underwood, 903 Commercial Street., Inglewood, Cal., using a wave length in excess of 200 meters; maximum penalty, $100.

George Vodra, 211 South Avenue, Los Angeles, Cal., using an amateur sending station without either station or operator's license; maximum penalty, $100 and imprisonment for not more than two months.

Stuart Dalton, 121 East Twenty-third Street, Los Angeles, Cal., using a wave length exceeding 200 meters; penalty, $100.

Harry Blodgett, 1953 Bonsallo Avenue, Los Angeles, Cal., using a transmitting station for some time without station or operator's license; maximum penalty, $100 fine and imprisonment for two months.

January, 1916
(No. 13)

LOS ANGELES AMATEURS REPRIMANDED AND PENALIZED.

Upon a recent inspection trip made by V. Ford Greaves, radio engineer of the Bureau, and Ellery W. Stone, assistant radio inspector at San Francisco, a number of amateurs were reported for violation of the fifteenth regulation of the act of August 13, 1912, for using a wave length in excess of 200 meters, and the following action in these cases has been taken by the Secretary of Commerce:

V. M. Bitz, 825 West Fifty-third Street, Los Angeles, Cal., licenses suspended.
Mark B. Cosby, 356 Hobart Avenue, Los, Angeles, Cal., licenses suspended.
Stuart Dalton, 121 East Twenty-third Street, Los Angeles, Cal., penalty remitted.
Hadys Hancock, Venice Pier, Venice, Cal., fined.
Freeman High, 726 West Twenty-seventh Street, Los Angeles, Cal., licenses suspended.
Horace Kemper, 173½ Loma Drive, Los Angeles, Cal., fined.
Alfred McLaren, 534 West Forty-ninth Street, Los Angeles, Cal., licenses suspended.
Ernest Underwood, 903 Commercial Street, Inglewood, Cal., fined.

John Bradley, 120 Julien Avenue, San Francisco, Cal., who was reported by the radio inspector at San Francisco for violation of sections 5 and 7 of the act of August 13, 1912, for the use of fraudulent call signals and interfering with the commercial traffic being handled by the Hillcrest station of the Marconi company and the steamship *J. A. Chanslor*, has been reprimanded by the Secretary of Commerce, and his licenses have been suspended.

LOS ANGELES AMATEURS REPORTED FOR VIOLATIONS.

In addition to the list of names given in Bulletin No. 12, the following amateurs were found to be operating stations without proper licenses in violation of the radio act, and the cases have been referred to the United States district attorney for prosecution:

George Hawley, 1257 Cypress Avenue, Los Angeles, Cal.
Jack Hyams, 119½ Spring Street, Los Angeles, Cal.
Edmund Whiting, 1047 Mignonette Street, Los Angeles, Cal.

The maximum penalty for the above violation is $500 fine and confiscation of the radio apparatus unlawfully used.

RADIO-SERVICE PERSONNEL.

Charles C. Kolster, assistant radio inspector at New York, N. Y., has been promoted to the position of radio inspector at New Orleans, La., to succeed Arthur R. Rice, who resigned on December 9, 1915. Harry Sadenwater, assistant radio inspector at New York, succeeds Mr. Kolster.

Charles Blankenship, assistant radio inspector at Chicago, Ill., has been transferred to the office of the chief radio inspector, New York, N. Y.

March, 1916
(No. 15)

CHANGES IN PERSONNEL.

R. B. Woolverton, radio inspector at San Francisco, Cal., has resigned, effective March 1, 1916, and V. Ford Greaves, radio engineer, will take charge of the San Francisco district temporarily.

April, 1916
(No. 16)

AMATEUR OPERATORS' LICENSES SUSPENDED.

The radio inspector, customhouse, Boston, Mass., has reported to the Bureau violations of the radio laws by amateurs in his district, resulting in the suspension of their license privilege by the Secretary of Commerce for periods of from one to three months:

Two at New Haven, Conn., reported for operating a radio station without a license for the station and without having an operator's license; licenses suspended for one month and two months, respectively.

One at Stoneham, Mass., reported for using profane and abusive language in transmitting messages; license suspended for three months.

The operators mentioned above have been notified that should they be reported for other violations of the radio laws, such leniency may not be shown them by the department.

AMATEUR PENALIZED.

An amateur radio operator at Stamford, Conn., has been indicted in the United States District Court at New Haven, Conn., for violation of sections 1, 2, and 3 of the act of August 13, 1912, entitled "An act to regulate radio communication."

The jury reported a verdict of guilty, charging the defendant with operating a radio station without a license for the station, and also without having an operator's license, and a penalty was imposed by Judge Thomas.

May, 1916
(No. 17)

LOS ANGELES AMATEURS FINED FOR RADIO VIOLATIONS.

On March 23, 1916, four amateurs, all residents of Los Angeles, Cal., appeared before Judge Oscar A. Trippet, of the United States District Court, and entered pleas of guilty to Federal indictments returned last December charging them with operating radio stations without first having obtained licenses from the Government. Fines were imposed by Judge Trippet and the offenders were admonished to be more cautious in future.

The trial of two other amateurs, who pleaded not guilty, has been set for next July.

The maximum penalty for the above violation is a fine of $100 and imprisonment for a period of two months.

BOSTON AMATEUR PENALIZED.

On April 19, 1916, the radio inspector at Boston, Mass., reported an amateur in his district for violation of sections 1, 3, and 7 of the act of August 13, 1912. The case was referred to the United States district attorney for prosecution. A verdict of guilty was rendered in the district court and a fine imposed.

The maximum penalty for the above violation is a fine of $500 and confiscation of the apparatus unlawfully used.

December 1, 1916
(No. 24)

RADIO SERVICE PERSONNEL.

H. C. Gawler, who has been serving as captain in the Signal Corps, Massachusetts National Guard, on the Mexican border, has returned to his duties as radio inspector at Boston, Mass.

Charles Blankenship, assistant radio inspector, who has been in charge of the first district during the absence of Radio Inspector H. C. Gawler, has been granted annual leave, at the expiration of which he will be assigned to the port of Norfolk, Va.

Ellery W. Stone, assistant radio inspector at San Francisco, Cal., is making an extended inspection trip through southern California and points in New Mexico and Arizona.

Otto R. Redfern, formerly manager of the Duluth (Minn.) station of the Marconi Wireless Telegraph Co. of America, has been appointed an assistant radio inspector in the service of the Bureau at New York, N.Y.

Joseph H. Hallock, of Underwood, Wash., has been appointed assistant radio inspector in the service of the Bureau and has been temporarily assigned to Norfolk, Va. Upon the assignment of Assistant Radio Inspector Blankenship to the port of Norfolk, Mr. Hallock will be assigned to duty in the fourth and fifth districts.

The temporary appointment of H. D. Hayes as assistant radio inspector at San Francisco, Cal., has been extended for a period of three months.

March 1, 1917
(No. 27)

CLASSIFICATION OF SPECIAL STATIONS.

There seems to be some misunderstanding concerning the classification of special stations, as provided in the Laws and Regulations, edition of July 27, 1914, pages 55 and 56.

Experiment stations.--In the case of experiment stations, such licenses are issued for the purpose of conducting experiments for the development of the science of radio communication, or the apparatus pertaining thereto, to carry on special tests using any amount of power or any wave lengths, at such hours and under such conditions as will insure the least interference, and where the owners of such stations desire to conduct the usual amateur communications, or engage in the amateur relay league work, this work should be performed on certain authorized wave lengths covered by a license issued for the purpose. It has been found that practically all experiments for the development of radio apparatus can be conducted on an artificial antenna. It may be necessary on special occasions to make tests with some other station for the purpose of determining some special characteristic of the station, this of course, being permitted.

Technical and training school stations.--In the case of technical and training school stations, these licenses are issued principally for the purpose of training radio operators, and it is believed that most of this work can be conducted without exceptional power and on wave lengths not exceeding 200 meters. Some of the schools turning out the largest number of operators have not found it necessary to do outside transmitting. This part of the training is conducted on buzzers arranged on an interior circuit. Should such stations desire to take part in the amateur relay league work, they should apply for special amateur licenses. Relay work should be conducted on a special wave length designated by the bureau, and ordinary outside communications should be conducted on a wave length not exceeding 200 meters.

Special amateur stations.--In the case of special amateur stations, a wave length in excess of 200 meters is permitted for the special amateur relay work, or emergency work such as that performed in the flood districts, and ordinary communications between special amateur and general amateur stations should not in any case be conducted on wave lengths in excess of 200 meters.

It should be borne in mind by applicants for experiment, technical, and training school, and special amateur station licenses, that the special wave lengths in excess of 200 meters, or power in excess of one-half kilowatt or one kilowatt, depending upon the location of the station, can not be granted for ordinary amateur work, and where stations given special licenses make use of this special power and these special wave lengths for ordinary amateur communication, and such stations are reported to the Bureau for causing interference, their station licenses may be suspended or revoked.

It should also be understood by the holders of special station licenses along the coast that the wave lengths of 300 meters and 600 meters authorized for these stations are solely for the purpose of "listening in" as required by the regulations, and are to be used for transmitting only in the event of an emergency such as is contemplated in the regulations.

Where it is desired and appears necessary that two classes of license be issued to a station, two applications should be sent in, one to cover each class of service, as, for example, experiment and special amateur, or experiment and general amateur.

Recently, there have been several applications received at the Bureau for experiment licenses where it appeared that the stations were to be used for limited commercial service.

All applicants for special licenses should furnish the Bureau, through the radio inspector, a statement covering completely the service which is to be conducted by the stations, and indicating the necessity for special power and wave lengths.

NOTE: Publication of the *Radio Service Bulletin* was suspended during World War I. (During the war, every radio station in the United States was either closed down or taken over by the U.S. Government.) Issue #27, dated March 1, 1917, was the last issue produced before the suspension. The publication started up again after the war with issue #28, dated August 1, 1919.

September 2, 1919
(No. 29)

GOVERNMENT AND COMMERCIAL CALLS.

It will be noted that in the "List of Radio Stations of the United States" some vessels and call letters appear in the commercial and also in the Government list. The reason for this is that at the present time it is not known when they will be released from Government service. When they enter the commercial service, the commercial calls only should be used.

EMERGENCY LICENSES AND TEMPORARY PERMITS.

Operators holding emergency licenses and temporary permits should arrange to take an examination and secure a regular license as early as possible. The holders of such licenses and permits can not be employed if regularly licensed operators are available. Operators holding second-grade licenses should endeavor to secure first-grade licenses, so as to be available for senior operators in charge of stations.

October 1, 1919
(No. 30)

RESTRICTIONS ON RADIO AMATEURS REMOVED.

Effective October 1, 1919, all restrictions on amateurs and amateur radio stations are removed. This applies to amateur stations, technical and experimental stations at schools and colleges, and to all other stations, except those used for the purpose of transmitting or receiving commercial traffic of any character, including the business of the owners of the stations. The restrictions on stations handling commercial traffic will be removed as soon as the President proclaims that a state of peace exists. Attention is invited to the fact that all licenses for transmitting stations have expired and that it will be necessary for amateurs to apply to the Department of Commerce, Bureau of Navigation, for new licenses.

AMATEUR RADIO OPERATORS.

Before operating transmitting stations it is necessary to take an examination and secure an operator's license and have on file with the district radio inspector a formal application for station license. If there will be delay in issuing your station license, the radio inspector can assign radio call letters when the application is received.

All amateurs should be familiar with the Radio Laws and Regulations. This publication can be procured from the Superintendent of Documents, Government Printing Office, Washington, D. C. Price, 15 cents.

All transmitting sets should be inductively coupled. Stations having what is known as plain aerial, or the spark gap directly in the antenna circuit, will not be licensed where they do not comply with regulations 3 and 4 of the act of August 13, 1912.

The List of Radio Stations of the United States, edition of June 15, 1919, does not contain amateur stations. This publication can be procured from the Superintendent of Document, Government Printing Office, Washington, D. C. Price, 10 cents.

A list of amateur stations may be published about the 1st of January, 1920. Any additional information required by amateurs may be obtained from the radio inspectors of their districts. Their addresses follow:

Radio Inspector, Customhouse, Boston, Mass.
Radio Inspector, Customhouse, New York, N. Y.
Radio Inspector, Customhouse, Baltimore, Md.
Radio Inspector, Customhouse, New Orleans, La.
Radio Inspector, Customhouse, San Francisco, Calif.
Radio Inspector, Federal Building, Detroit, Mich.
Radio Inspector, Federal Building, Chicago, Ill.
Radio Inspector, 205 Citizens Bank Building, Norfolk, Va.
Radio Inspector, 2301 L. C. Smith Building, Seattle, Wash.

The territory covered by each district is shown on page 68 of the Radio Laws and Regulations. Amateurs in the fourth district (headquarters, Savannah, Ga.), should address their communications to the Radio Inspector, Customhouse, Baltimore, Md.

February, 2, 1920
(No. 34)

RANGE OF AMATEUR STATIONS.

On January 21 the Bureau received a radiogram from an amateur radio station in Hartford, Conn., which was sent direct to an amateur station in Washington, using a wave length of 200 meters. This indicates the range of such stations on a 200-meter wave length when the apparatus is efficient.

March 1, 1920
(No. 35)

EXECUTIVE ORDER.

Whereas, pursuant to authority of Executive orders of April 6, 1917 and April 30, 1917, certain radio systems and stations were taken over by the Government and certain restrictions were placed on the operation of other radio systems and stations;

I, Woodrow Wilson, President of the United States of America, do hereby authorize, order, and direct as follows:

All radio stations taken over by the Government of the United States and now held by it under authority of Executive orders of April 6 and April 30, 1917, respectively, including all systems, lines, and property taken possession of or received, operated, supervised, or controlled under authority of said Executive Orders shall, at midnight on the 29th day of February instant, be returned and delivered to the respective owners thereof.

All restrictions placed under authority of said Executive orders of April 6 and April 30, 1917, on all radio stations not necessary to the Government for naval communications shall be removed, to take effect at midnight on the 29th day of February instant, from which time the control and operation of all radio stations not owned, controlled, or operated by the Government independently of action taken by or on behalf of the Government under the aforesaid Executive orders of April 6 and April 30, 1917, shall be subject to the provisions of the act to regulate radio communication approved August 13, 1912.

The enforcement of this order is hereby delegated to the Secretary of the Navy, who is authorized and directed to take appropriate action in the premises.

WOODROW WILSON.

THE WHITE HOUSE,
13 February, 1920.

(No. 3228.)

The above order is printed in full for the information of all concerned.

LAND STATIONS REOPENED.

Attention is invited to the fact that the following coast stations are opened to public service for communication with vessels at sea:

Brooklyn, N. Y. (WCG).
Burwood, La. (WBW).
Jamaica, N. Y. (WSK).
New London, Conn. (WLC).
New Orleans, La. (WNU).
Newport, R. I. (WCI).

May 1, 1920
(No. 37)

APPLICATIONS FOR RADIO CALL LETTERS.

Applications for radio call letters for ships should be filed with the collectors of customs at the various ports at the time application is made for the official number and signal letters and *not* before such time. When the official number has already been assigned, the application should give the number, and, in case a vessel has had a former name, the name should be given. All particulars regarding the hours of service, class of service, rates, etc., should be reported without delay in order that the information can be published in the RADIO SERVICE BULLETIN. When it is very inconvenient to apply to the collector of customs, application may be made to the radio inspector.

LAND-STATION LICENSES.

All commercial land stations, experimental and technical and training stations are required to obtain a license before operating, as required by section 1 of the act of August 13, 1912. The filing of the application or the assignment of radio call letters does not constitute authority for operating a station. Owners of stations who fail to comply with the above requirements may expect action to be taken in accordance with the above-cited act.

June, 1, 1920
(No. 38)

CHANGE IN RADIO INSPECTION DISTRICTS.

The headquarters of the eighth district has been transferred from Cleveland, Ohio, to Detroit, Mich. The office of the inspector is in the Federal Building.

The office of the fourth district at Savannah, Ga., has been closed. The work of this district is being handled by the inspector of the third district, Customhouse, Baltimore, Md.

BROADCASTING HYDROGRAPHIC AND WEATHER REPORTS.

Hydrographic and weather reports are broadcasted (this service begun May 1, 1920) from the United States naval radio stations on the following schedules and wave lengths:

Radio station.	Time.	Wave lengths.	[Frequency.]
		Meters.	*[Kilohertz.]*
Point Arguello, Calif.	8 a. m.	952	315
	Noon	600	500
	4 p. m.	952	315
	10 p. m.	600	500
San Diego, Calif. San Francisco, Calif.	8 a. m.	600	500
	Noon	952	315
	4 p. m.	600	500
	10 p. m.	952	315

September 1, 1920
(No. 41)

NORMAL WAVE LENGTH.

Every coast station open to general public service is required to have a normal sending and receiving wave length of 600 meters, and all general public service with ship stations must be conducted on 300, 600, or 1,800 meters.

The department interprets the radio laws and the London Convention to require that every coast station, excepting general and restricted amateur, shall have a normal wave length of 600 meters for use in case of distress or emergency, and licenses issued for such stations so indicate.

The indication of a 600-meter normal wave length for a special station does not mean that the station shall use this wave length for its *normal* business. All radio communication, other than general public service, must be conducted on some authorized wave length other than 300, 600, or 1,800 meters, but the station is required, when open and no special business is being conducted, to listen in with the receiving apparatus tuned to receive the 600-meter wave length and must be prepared to transmit on 600 meters if necessary.

The Radio Laws and Regulations, edition of August 15, 1919, page 52, paragraphs 38 to 50, inclusive, bear on this subject, and paragraph 44 provides that all coast stations shall listen in at intervals of not more than 15 minutes and for not less than 2 minutes, with the receiving apparatus adjusted to receive a 600-meter wave length. The act of August 13, 1912, section 4, regulation 11, requires general public-service coast stations to listen in at intervals of not less than 15 minutes and for a period of not less than 2 minutes with the receiver tuned to receive messages of 300-meter wave lengths.

April 1, 1921
(No. 48)

RESTRICTIONS ON SPECIAL AMATEUR STATIONS.

It has been brought to the attention of the Bureau that amateur operators have been purchasing radio equipment which can not be satisfactorily adjusted for the amateur wave length of 200 meters, and because of this they have been applying for special licenses.

Radio inspectors are not authorized to recommend special amateur station licenses except in accordance with paragraph 63 of the "Radio Communication Laws of the United States."

The number of special amateur station licenses must be limited, and very few will be approved for stations along the coast or in localities where the location of such stations may interfere with maritime, Government, or commercial radio communication.

WARNING TO AMATEURS.

Amateurs desiring to continue the operation of their stations must apply for renewal of their station and operator licenses at time of expiration. The operation of stations after the licenses expire is a violation of section 1, act of August 13, 1912, penalty $500, and the apparatus or device so unlawfully used and operated may be adjudged forfeited to the United States. Amateurs discontinuing the use of their stations should surrender their licenses to the radio inspector of the district for cancellation. Where amateurs fail to make application for renewal of their licenses at the time of expiration, their names may not be included in the next radio call book and the call letters assigned may be rescinded and assigned to other stations.

September 1, 1921
(No. 53)

EXAMINATION FOR RADIO INSPECTOR.

The U. S. Civil Service Commission will hold an examination on October 5 next for radio inspector and

assistant radio inspector to fill vacancies which may occur in the Bureau of Navigation, Department of Commerce. For further information apply to the Commission.

December 1, 1921
(No. 56)

WARNING TO AMATEURS.

The Bureau has received a number of complaints recently of amateur stations using wave lengths in excess of those authorized in their licenses which has resulted in much unnecessary interference. Amateurs should, if possible, have their wave lengths measured to avoid violating the law.

Attention is invited to the 15th regulation, section 4, act of August 13, 1912, and the penalties provided in this section, following the 19th regulation on page 13, Radio Laws and Regulations.

It has also been reported that a number of amateur stations are using more power than necessary, which is a violation of the 14th regulation, section 4, act of August 13, 1912. The penalties noted above apply to violations of this character.

BROADCASTING SERVICE.

Applicants for radio-station licenses desiring to use their stations for broadcasting market reports and weather forecasts should submit with their application a letter from the Chief, Bureau of Markets, or the Chief of the Weather Bureau, indicating that this service is desired.

February 1, 1922
(No. 58)

BROADCASTING.

Because of the rapid development of radio broadcasting during the last three months, the value of such service to the public, and the limitation of wave lengths which can be assigned for this service, it has been found necessary to take precautions to protect the broadcasting service from interference. It was decided first to regulate broadcasting by the larger stations by requiring special authority to do so on special wave lengths. It later became apparent that some restriction must be placed on amateur stations, and the privilege of amateur broadcasting was temporarily withdrawn pending the adoption of a plan which would be acceptable to the amateurs engaged in radiotelegraphic communication.

Two plans have been suggested: First, the use of 200 meters [1500 kilohertz] between certain hours each day, and, second, the use of the wave length of 175 or 225 meters [1714 or 1333 kilohertz] for broadcasting only. If the second plan is agreed upon with the wave length of 175 meters, this authority could be given in the ordinary amateur licenses. The use of 225 meters will require special licenses.

The Bureau would like to have any practical suggestions from radio inspectors and amateurs which will be helpful in reaching a satisfactory solution of this question.

March 1, 1922
(No. 59)

RADIO TELEPHONE CONFERENCE IN WASHINGTON.

At the suggestion of President Harding, Secretary Hoover held a conference on the 27th of last month of representatives of various radio interests to investigate the development and regulation of the radio telephone.

Experts from the various interests, including the amateurs, attended the meeting and were given opportunity to express their opinions.

At the conclusion of the conference Secretary Hoover appointed the following committees to look into the different phases of radio telephone communication:

Legal: Representative Wallace H. White, chairman; A. J. Tyrer, Deputy Commissioner of Navigation; W. D. Terrell, chief radio inspector, Bureau of Navigation; Senator Frank B. Kellogg.

Technical: Dr. S. W. Stratton, Director of Bureau of Standards, chairman; Maj. Gen. George O. Squier, U. S. A.; Capt. S. W. Bryant, U. S. N.; Prof. A. L. Hazeltine, Stevens Institute, Hoboken, N. J.; Dr. Alfred N. Goldsmith, secretary, Society Radio Engineers, New York City; Edwin H. Armstrong, Columbia University, New York City; Prof. C. M. Jansky, jr., University of Minnesota; W. A. Wheeler, Department of Agriculture; J. C. Edgerton, Post Office Department.

Amateurs: Hiram Percy Maxim, chairman, Hartford, Conn.; Edwin H. Armstrong; Prof. C. M. Jansky, jr.; Prof. L. A. Hazeltine.

April 1, 1922
(No. 60)

REGULATIONS PERTAINING TO THE RADIO BROADCASTING OF WEATHER, CROP, AND MARKET INFORMATION.

1. Forecasts, warnings, and weather reports issued by the Weather Bureau and crop and market reports issued or approved by the Bureau of Markets and Crop Estimates shall be broadcast only from radio stations authorized and licensed to do so by the Bureau of Navigation, Department of Commerce.
2. Broadcasting of weather forecasts and information and crop and market reports shall be confined to radio stations properly equipped for the work and operated by persons holding a commercial second-class or a higher grade of license.

3. No plant will be licensed by the Bureau of Navigation to disseminate weather forecasts and information or crop and market reports, except on the approval of the Chief of the Weather Bureau and of the Chief of the Bureau of Markets and Crop Estimates, respectively.

4. The call letter and location of the station and the official authenticity of the information shall be announced preliminary to each broadcast, and is approximately as follows.

This is located at . The weather forecast and reports issued by the U. S. Weather Bureau are as follows; or, market and crop reports, approved by the Bureau of Markets and Crop Estimates, are as follows:

5. The laws pertaining to the issuance of weather forecasts shall be observed. Violators of the following law will be prosecuted.

SEC. 61. Whoever shall knowingly issue or publish any counterfeit weather forecast or warning of weather conditions falsely representing such forecast or warning to have been issued or published by the Weather Bureau, United States Signal Service, or other branch of the Government service, shall be fined not more than five hundred dollars, or imprisoned not more than ninety days, or both. (Act of March 4, 1909, C 321, 35 Stat., 1088.)

6. All broadcasts shall be according to schedules approved by the Weather Bureau or by the Bureau of Markets and Crop Estimates. No forecasts based on a. m. observations shall be broadcast after 7 p. m. of the same day; no special warnings based on special observations shall be broadcast after midnight of the same day; and no forecasts or warnings based on p. m. observations shall be sent after 7 a. m. of the succeeding day, 75th meridian time applying in all cases.

7. Stations authorized to broadcast official weather forecasts and information crop and market reports will use a wave length of 485 meters [619 kilohertz] unless otherwise licensed to do so by the Bureau of Navigation, Department of Commerce. This special wave length shall be used for no other purpose.

8. License to broadcast weather forecasts and information and crop and market reports shall be revocable at any time that it may be in the public interest to do so.--*Submitted by Department of Agriculture.*

RADIO BROADCASTING.

At the present time two wave lengths are assigned for broadcasting--the wave length of 485 meters [619 kilohertz] for Government reports, such as crop and market estimates and weather forecast furnished by the Department of Agriculture; the wave length of 360 meters [833 kilohertz] for important news, items, entertainment, lectures, sermons, and similar matter.

Stations conducting this service must have limited commercial licenses and be operated by radio operators licensed by the Department of Commerce holding commercial second-class licenses or higher.

Applications for licenses should be made through the radio inspector of the district in which the station is situated.

The radio inspection districts are as follows:

1. Headquarters, Boston, Mass. (radio inspector, customhouse): Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut.
2. Headquarters, New York, N. Y. (radio inspector, customhouse): New York (County of New York, Staten Island, Long Island, and counties on the Hudson River to and including Schenectady, Albany, and Rensselaer) and New Jersey (Counties of Bergen, Passaic, Essex, Union, Middlesex, Monmouth, Hudson, and Ocean).
3. Headquarters, Baltimore, Md. (radio inspector, customhouse): New Jersey (all counties not included in second district), Pennsylvania (counties of Philadelphia, Delaware, all counties south of the Blue Mountains, and Franklin County), Delaware, Maryland, Virginia, District of Columbia.
4. Headquarters, Savannah, Ga. (the work of this district is being performed by the radio inspector of the third district, radio inspector, customhouse, Baltimore, Md.): North Carolina, South Carolina, Georgia, Florida, Porto Rico.
5. Headquarters, New Orleans, La. (radio inspector, customhouse): Alabama, Mississippi, Louisiana, Texas, Tennessee, Arkansas, Oklahoma, New Mexico.
6. Headquarters, San Francisco, Calif. (radio inspector, customhouse): California, Hawaii, Nevada, Utah, Arizona.
7. Headquarters, Seattle, Wash. (radio inspector, 2301 L. C. Smith Building): Oregon, Washington, Alaska, Idaho, Montana, Wyoming.
8. Headquarters, Detroit, Mich. (radio inspector, Federal Building): New York (all counties not included in second district), Pennsylvania (all counties not included in third district), West Virginia, Ohio, Michigan (lower peninsula).
9. Headquarters, Chicago, Ill. (radio inspector, Federal Building): Indiana, Illinois, Wisconsin, Michigan (upper peninsula), Minnesota, Kentucky, Missouri, Kansas, Colorado, Iowa, Nebraska, South Dakota, North Dakota.

January 2, 1923

RADIO INSPECTOR EXAMINATION, NO. 54 (ASSEMBLED) MARCH 7, 1923.

(No. 69)

The United States Civil Service Commission announces an open competitive examination for radio inspector on the above date at any of the places listed hereon at which examination is requested in applications received in time to mail examination papers. Vacancies in the positions of radio inspector and assistant radio inspector in the Bureau of Navigation, Department of Commerce, at $1,800 to $2,200 a year (plus "bonus," see below), and in positions requiring similar qualifications at these or higher or lower salaries, will be filled from this examination, unless it is found in the interest of the service to fill any vacancy by reinstatement, transfer, or promotion.

Range in salary.--The entrance salary within the range stated will depend upon the qualifications of the appointee as shown in the examination and the duty to which assigned.

Bonus.--Appointees whose services are satisfactory may be allowed the increase granted by Congress of $20 a month.

Citizenship and sex.--All citizens of the United States who meet the requirements, both men and women, may enter this examination: appointing officers, however, have the legal right to specify the sex desired in requesting certification of eligibles. For these positions in the Bureau of Navigation men are desired.

Duties.--The duties of radio inspectors will be primarily to inspect the radio apparatus on steamships, to insure its compliance with the law, and to inspect shore stations. The inspectors may be also called upon to examine radio operators. The duties of radio inspectors require some office experience, therefore competitors should outline fully in their applications any office experience they may have had.

The duties of assistant radio inspectors will be primarily the assisting of radio inspectors in the enforcement of the wireless communication laws. Assistant radio inspectors will be required to inspect the radio equipment on board vessels and in land stations, which involves the carrying of 30 or 40 pounds of testing and measuring instruments. The inspection work requires a knowledge of the installation and operation of the several types of radio installations, including the adjustment and tuning of transmitters and receivers.

Subjects and weights.--Competitors will be examined in the following subjects, which will have the relative weights indicated.

	Weights.
1. Theoretical and practical questions in the construction, use, and adjustment of radio apparatus and auxiliaries (eligible rating required.)	50
2. Education and experience in the line of the required duties.	50
Total	100

Applicants must attain an eligible rating in the first subject.

Education and experience.--Applicants must have received a bachelor of science degree from a school of recognized standing, such educational training to have included a special course in radio or kindred sciences, or show that they are senior students in such institutions; or have had the equivalent of a high-school education and at least two years' experience in special radio work, such as the manufacture, installation, or adjustment of commercial or governmental wireless apparatus. It is essential that applicants be wireless telegraph operators.

Statements as to education and experience are accepted, subject to verification.

Age.--Applicants must have reached their twenty-first but not their fiftieth birthday on the date of examination. These age limits do not apply to persons entitled to preference because of military or naval service, but such applicants must not have reached the retirement age.

Retirement.--Classified employees who have reached the retirement age and have served 15 years are entitled to retirement with an annuity. The retirement age for railway mail clerks is 62 years, for mechanics and post office clerks and carriers 65 years, and for others 70 years A deduction of 2 1/2 per cent is made from the monthly salary to provide for this annuity, which will be returned to persons leaving the service before retirement with 4 per cent interest compounded annually.

Photographs.--Applicants must submit to the examiner on the day of the examination their photographs, taken within two years, securely pasted in the space provided on the admission cards sent them after their applications are filed. Proofs or group photographs will not be accepted. Photographs will not be returned to applicants.

Residence and domicile.--Applicants may be examined at any place at which this examination is held, regardless of their place of residence; but only those who have been actually domiciled in the State or Territory in which they reside for at least one year previous to the examination, and who have the county officer's certificate in the application form executed, may become eligible for permanent appointment to the apportioned service in Washington, D. C.

Oral examination.--Applicants may be required to report either in Washington, D. C., or elsewhere, for oral examination to determine their personal characteristics and address, tact, judgment, adaptability, and general fitness for the performance of the duties of the position. An applicant who fails to pass the oral examination will not be eligible for appointment. Applicants will he notified of the date and place of the oral examination.

Applications.--Applicants should at once apply for Form 1312, stating the title of the examination desired, to the Civil Service Commission, Washington, D. C., or to the Secretary of the United States Civil Service Board at any place listed hereon. Applications should be properly executed, excluding both vouchers and the medical

certificate, and filed with the commission at Washington in time to arrange for the examination at the place selected by the applicant.

The exact title of the examination, as given at the head of this announcement, should be stated in the application form.

Preference.--Applicants entitled to preference should attach to their applications their original discharge, or a photostat or certified copy thereof, or their official record of service, which will be returned.

- United States Early Radio History

Early Radio Station Lists Issued by the U.S. Government.

EARLY RADIO STATION LISTS ISSUED BY THE U.S. GOVERNMENT

Thomas H. White -- November 28, 1998

Background

Accurate AM (mediumwave) radio station lists for the period 1906-1946 can be difficult to find. However, often overlooked are some U.S. government publications, which include lists that generally are more accurate than those found in contemporary magazines and newspapers. This reviews basic information about these station lists. In addition, some of these lists are posted here for on-line access. [NOTE: Many additional on-line station lists are available at Jeff Miller's Broadcasting History Collection]

Most research libraries have government documents holdings. This is especially true of universities, which often are official depositories. However, in most cases these documents are kept in a separate Public Documents section. Thus, they often are not listed in the main holdings catalog.

The Public Documents section has its own catalog system, based on agency identifiers. Over the past century the U. S. government has printed a monthly report of all documents issued. In addition, there are a number of standard publications that summarize and cross-reference the monthly listings. Because interest in, and regulation of, radio has shifted between various governmental departments, a given document sometimes jumps from one shelf area to another, reflecting the latest departmental reorganization. Below is a summary of the departments which have issued radio station lists, along with the Public Documents agency identifier used.

Government Departments

United States radio stations were unlicenced until 1912. Until then the U.S. Navy, among other agencies, monitored wireless development. International station lists were first issued by the Navy's Equipment Bureau **[N5]**, beginning in 1906. When the Equipment Bureau was abolished July 10, 1910, responsibility for the station lists was transferred to the Steam Engineering Bureau **[N19]**.

Meanwhile, the Department of Commerce and Labor (after 1913, the Department of Commerce) was keeping track of the growth of radio aboard seagoing vessels, and the Department's Bureau of Navigation **[C11]** began including shipboard-related radio information in a number of its annual publications. Then in 1912, licencing of all U. S. radio stations began, set up under the jurisdiction of the Commerce Department. The Bureau of Navigation became responsible for issuing the official annual U. S. radio station lists, from 1913 to 1926. (The lists were suspended in 1918 and 1919 because of World War I.)

In 1927 the "temporary" Federal Radio Commission was set up, but most radio work continued to be done by the Commerce Department. However, a reorganization transferred radio work to the Commerce Department's new Radio Division **[C24]**, which issued the annual station lists from 1927 to 1931. Then, in June, 1932, Commerce's Radio Division was abolished, and all radio work moved over to the Federal Radio Commission **[RC1]**.

In 1934 the FRC was supplanted by the Federal Communications Commission **[CC1 & CC2]**. (During World War II the government again ceased publication of station lists).

In addition, the Radio Service Bulletin, first issued in 1915, included a number of official broadcast station lists in the period 1922-1928.

United States Government-issued Radio Station Lists

NOTE: xxx refers to the last 3 digits of the year of issue, for example "921" for 1921.

DEPARTMENT OF THE NAVY BUREAU OF EQUIPMENT

Wireless Telegraph Stations of the World. Ship and shore stations world-wide, plus stations operated by the U. S. government. Amateur and inland stations are generally *not* included. NOTE: At this time the U.S. government had not yet begun licencing stations.

N5.2:M74/xxx October 1, 1906; August 1, 1907; October 1, 1908; September 1, 1909

DEPARTMENT OF THE NAVY BUREAU OF STEAM ENGINEERING

N19.7:xxx October 1, 1910; January 1, 1912

Annual Report of the Commissioner of Navigation. On June 24, 1910, "An Act to require apparatus and operators for radio communication on certain ocean steamers" was passed by the U. S. Congress, to become effective July 1, 1911. The act required that larger ocean-going vessels -- of all nationalities -- which visited U. S. ports have efficient radio equipment operated by certified operators. As part of its enforcement of the new act, the Bureau of Navigation included an appendix in its 1910 through 1912 annual reports, with detailed radio information about the vessels covered by the act.

C11.1:xxx Issued annually, as of June 30th.
June 30, 1910 Appendix M; June 30, 1911 Appendix M; June 30, 1912 Appendix K

Merchant Vessels of the United States. Beginning in 1878, the U. S. Government published an annual list of registered vessels. In 1911, this publication, produced by the Department of Commerce and Labor, began to include basic information about the U. S. vessels which operated radio transmitters.

C11.5:xxx Issued annually, as of June 30th.
June 30, 1911 vessels with radio equipment; June 30, 1912 vessels with radio equipment

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Radio Stations of the United States. The passage of the "Act to Regulate Radio Communication" meant that, effective December 13, 1912, U. S. ship and land radio stations had to have licences to order to operate transmitters. The Department of Commerce began issuing an annual list of licenced U. S. stations, divided within the following licence categories: Commercial [Ship/Public Service/Limited Commercial], Government, Amateur [General/Restricted], and Special Land [Experimental/Technical & Training School/Special Amateur].

C11.7/6:xxx July 1, 1913; July 1, 1914; July 1, 1915; July 1, 1916; June 5, 1919 [plus quarterly supplements for the 1913 and 1914 editions. Supplements were no longer needed after the introduction of the *Radio Service Bulletin* in 1915. No lists were issued in 1917 or 1918 due to World War One.]

Commerical and Government Radio Stations of the United States. Beginning in 1920, station lists were divided between two publications. This publication included Commercial [Ship/Public Service/Limited Commercial], Government, and

Amateur Radio Stations of the United States. Amateur stations [General/Restricted] were listed in a separate annual publication beginning in 1920. In addition, starting with the 1922 edition, this publication also

Special Land [Experimental/Technical & Training School/Special Amateur] station lists. It also included a broadcasting station list, beginning with the 1922 issue. (The 1928 issue included a second broadcast station list, as of November 11, 1928).

C11.7/6:xxx/1	Issued annually, as of June 30th, for 1920 through 1926, by the Bureau of Navigation.
C24.5:xxx/1	Issued annually, as of June 30th, for 1927 through 1931, by the Radio Division. Broadcast service, by *call* as of June 30, 1922 Broadcast service, by *city* as of June 30, 1922

included a duplicate of the Special Land Stations [Experimental/Technical & Training School/Special Amateur] list appearing in *Commerical and Government Radio Stations of the United States*.

C11.7/6:xxx/2	Issued annually, as of June 30th, for 1920 through 1926, by the Bureau of Navigation.
C24.5:xxx/2	Issued annually, as of June 30th, for 1927 through 1931, by the Radio Division.

FEDERAL RADIO COMMISSION U.S.

Radio Broadcast Stations of the United States. Broadcast stations only.

RC1.9/:xxx	February 2, 1931 by call, by state, and by frequency; January 1, 1932 by call, by frequency, and by state within zones; (plus April 1, 1932 supplement); January 1, 1934 by call, by frequency, and by state within zones;(plus April 1, 1934 supplement).

FEDERAL COMMUNICATIONS COMMISSION U.S.

Radio Broadcast Stations. Lists arranged by callsign, frequency, and state.

CC1.21:xxx	By *callsign*: 1/1/1936; 1/1/1937; 1/1/1938; 1/1/1939;1/1/1940; 9/10/1940; 1/1/1941; 3/29/1941
CC1.22:xxx	By *frequency*: 1/1/1936; 1/1/1937; 1/1/1938; 1/1/1939; 1/1/1940; 9/10/1940; 3/29/1941; 1/1/1946
CC1.23:xxx	By *state*: 1/1/1936; 1/1/1937; 1/1/1938; 1/1/1939; 9/10/1940; 3/29/1941
CC1.24:xxx/corr-#	Monthly updates to above three (Some of above may be filed as CC2.10, CC2.11, CC2.12 and CC2.13)

Radio Service Bulletin [COMMERCE/FRC/FCC] Issued monthly to February 28, 1933 (issue #191), then twice-a-month. Listed new/changed/deleted information for Commercial [Ship/Public Service/Limited Commercial], Government, and Special Land [Experimental/Technical & Training School/Special Amateur] stations, plus other service information. (The Radio Service Bulletin did not report station information for individual Amateur [General/Restricted] stations.

NOTE: # refers to the issue number.

C11.7/3:#	Issues 1 to 119 (1/1/1915 to 2/28/1927). [None issued 4/1917 to 7/1919]
C24.3:#	Issues 120 to 183 (3/31/1927 to 6/30/1932)
------	Issues 184 to 222 (7/30/1932 to 7/1/1934)
CC1.25	Issues 223 to 677 (7/15/1934 to 2/15/1952) [some may be filed under CC1.3/2 and CC2.3]

The following United States broadcast service station lists appeared in the *Radio Service Bulletin:*

Date	**Issue**	**Contents**
03/01/1922	59	By owner as of 3/10/1922
04/01/1922	60	By owner as of 3/31/1922; By owner for 4/1/1922 through 4/15/1922
05/01/1922	61	By call as of 4/30/1922; By call for 5/1/1922 through 5/12/1922
06/01/1922	62	By call as of 5/31/1922; By call for 6/1/1922 through 6/15/1922
04/02/1923	72	By call as of 3/1/1923
02/01/1924	82	By call as of 1/31/1924
03/01/1924	83	By call as of 2/29/1924
02/02/1925	94	By call as of 1/31/1925
03/02/1925	95	By frequency as of 2/28/1925
06/01/1925	98	By state/city as of 5/31/1925
01/30/1926	106	By state/city as of 1/30/1926; By call as of 1/30/1926
12/31/1926	117	By call as of 12/31/1926
04/30/1927	121	By call as of 4/30/1927
05/31/1927	122	By state/city as of 6/15/1927; By freq. for 6/15/1927
01/31/1928	130	By call as of 1/31/1928

Some of the above lists also appear in various issues of the Federal Radio Commission Annual reports. The Third Annual Report [RC1.1:928] also includes a list, by call, as of 11/9/1929

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